

**STANDARD OPERATING PROCEDURES**  
**FOR**  
**MITIGATION**  
**ASSESSMENT TEAM PROCESS**



**FEMA**

Federal Emergency Management Agency

Mitigation Division

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## **List of Acronyms**

BPAT	FEMA's Building Performance Assessment Team
CO	FEMA's Contracting Officer
DHS	Department of Homeland Security
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FTM	FEMA's Technical Monitor
GIS	Geographic Information System
GPO	U.S. Government Printing Office
GPS	Geographic Positioning System
HAZUS	Hazards U.S.
HMGP	Hazard Mitigation Grant Program
HPA	Hazards Performance Analysis
HQ	FEMA Headquarters
JFO	Joint Field Office
MAT	FEMA's Mitigation Assessment Team
NFIP	National Flood Insurance Program
OFA	Other Federal Agency
OSHA	U.S. Occupational Safety and Health Administration
PFAT	MAT Preliminary Field Assessment Team
PM	FEMA's Project Monitor
PO	FEMA's Project Officer
RO	FEMA Regional Office
SOP	MAT Standard Operating Procedure
TL	MAT Team Leader
TM	MAT Team Manager
TRO	Transitional Recovery Office

TS Contractor            FEMA's Technical Support Contractor

TSPM                      FEMA's Technical Support Contractor Project Manager

Note: See Appendix G: *MAT Glossary* for additional information

## **Executive Summary**

Among the activities that the Federal Emergency Management Agency (FEMA) carries out in response to natural disasters caused by events such as floods and hurricanes is the deployment of Mitigation Assessment Teams (MATs). These teams are formed by and operate under the direction of the Mitigation Division's Risk Reduction Branch, Building Science Section which is located at FEMA Headquarters (HQ). While the MAT program is managed from FEMA HQ, Regional Office, Joint Field Offices, and Regional staff play a key role in both approving the deployment, funding, and staffing of each MAT. Members of a MAT generally include representatives from FEMA Headquarters and the FEMA Regional Offices (ROs); representatives from state and local governments; consultants who are experts in specific technical fields such as structural engineering, building design and construction, land use and floodplain management, and building codes; and other technical, administrative, and general support personnel.

A MAT conducts field inspections and technical evaluations of the performance of buildings subjected to forces generated by the event. The primary purpose of the MAT's technical evaluations is to identify design practices, construction methods, and building materials that either failed under the forces generated by the event or were successful in resisting such forces. In addition, the MAT will often look at land use management and planning practices as well as natural hazard identification and risk assessment. This is done in an effort to learn whether actions, other than those involved in designing and constructing buildings, were successful in minimizing damages from natural hazards. One of the major objectives of the MAT is to provide recommendations that can help reduce future damage from natural disasters. The MAT's findings and recommendations are aimed primarily at construction contractors, architects, engineers, planners and those local building officials who are involved in permitting, inspection, and development of building codes, as well as floodplain and land use management provisions. Recommendations generally focus on improvements in local building design, construction, and land use, as well as the enhancement and improved enforcement of local building codes and floodplain and land use management provisions. Usually, the culmination of the MAT's efforts is a report that presents the team's observations, conclusions, and recommendations for improving building performance in future natural disasters.

The Risk Reduction Branch, Building Science Section's Technical Support (TS) Contractor supports the MAT Program. This contractor plays a pivotal role in ensuring the FEMA is capable of deploying a MAT anywhere in the United States within 48 hours following a major disaster. To accomplish this task, FEMA MAT program personnel and the TS Contractor monitor weather and other conditions that may lead to a major disaster and maintain a sufficient state of readiness to deploy as necessary. As part of the MAT Program, the TS Contractor maintains a MAT Roster that includes information on hundreds of natural hazard mitigation specialists. These specialists have a broad range of expertise and are from all across the United States. Each specialist has agreed to serve on a MAT, if called upon.

To make the MAT process an integral part of disaster response and hazard mitigation activities, FEMA has developed this *MAT Standard Operating Procedure (SOP)*. This SOP is a proactive and comprehensive approach to the planning, pre-deployment, deployment, field assessment, and post-deployment functions of a MAT. Under this approach, whenever possible, the process for determining the need for assembling and deploying a MAT begins well in advance of the disaster event itself, and the potential members of the MAT will have already been identified, qualified, and placed on “standby” for deployment by FEMA. To consistently meet these objectives, and to address the need for coordination among the Federal, state, local, and private entities that may be called upon to serve on a MAT, FEMA has developed this SOP. This plan describes the major components of the MAT process, from pre-disaster planning activities, through deployment of MATs, to the Completed Report preparation and post-disaster follow-up activities. Because the needs of FEMA, the state, and the local government may vary from one disaster to another, and because FEMA will continue to gain experience with the MAT process, this SOP will be regularly evaluated and modified as necessary.

The information presented in the SOP is organized according to the major phases of the MAT process. The MAT process consists of three major phases that are as follows:

1. planning and pre-deployment
2. deployment and field operations
3. post-deployment

The scale of the disaster – and the extent of the MAT efforts – will be assessed based on the magnitude and extent of the disaster effort. As summarized in Tables ES-1 and ES-2, there are three basic scales used to approach the MAT process: minimal, standard, and catastrophic.

**Table ES-1. Summary of Disaster Scale Assessment for MAT Process**

Scale of MAT Process	Typical Disaster Magnitude and Extent	Examples of Recent Disasters of this Scale
<b>Minimal</b>	Category 1 or 2 Hurricane and/or impacting only one state	Hurricane Georges in Puerto Rico (1998), Hurricane Fran (1996)
<b>Standard</b>	Category 3 Hurricane and/or impacting one or two states	Hurricane Charley (2004), Hurricane Ivan (2004)
<b>Catastrophic</b>	Category 4 or 5 Hurricane and/or impacting two or more states	Hurricane Katrina (2005)



**Table ES-2. Summary of TS Contractor Approach to the MAT Process by Disaster Scale**

MAT Task	TS Contractor Requirement	Unit	Units Required by Scale of MAT Approach		
			Minimal	Standard	Catastrophic
Preliminary Field Assessment Team (PFAT)	PFAT Staff	Each	1	3	4
	Duration in Field	Days	3	5	7
	Aerial Assessment	Each	Optional	Required	Required
Mitigation Assessment Team (MAT)	MAT Field Operations Staff	Each	7	10	14
	MAT Support Staff	Each	1	4	5
	Total MAT Staff	Each	8	14	19
	Duration in Field	Days	7	10	14
MAT Preliminary Reporting (White Paper, JFO and Outreach Presentations)	Preliminary Reporting Staff	Each	7	9	13-14
	Duration in Field	Days	2	3	5
	Typical White Paper Size	Pages	10	20	40
	Typical JFO Presentation	Slides	30	60	100
	Outreach Presentations	Each	8	15	30
MAT Completed Reporting	Completed Report Staff	Each	7-8	12-13	15-16
	Duration to Complete	Months	6	8	12
	Typical Report Size	Pages	100	200	500
	MAT Summary Report	Each	Not Required	Not Required	Optional
Technical Recovery Advisories (RAs)	Production Staff	Each	4	6	8
	Duration to Complete	Weeks	8	11	14
	Number of Advisories	Each	1	3	5

The operations described in this document are primarily designed for responses to disasters for which FEMA has enough warning time to carry out the pre-event activities, but as shown in Table ES-3 they can be modified to address those disasters that occur with little or no warning. Hurricanes, such as Opal, which occurred in 1995, and Georges, which occurred in 1998, are examples of disasters that struck with considerable warning. Earthquakes and tornadoes are examples of disasters that can cause devastation with little or no warning.

**Table ES-3. Summary of Disaster Scale Assessment for MAT Process for Other Disasters**

Disaster	Scale of MAT Process	Typical Disaster Magnitude and Extent	Examples of Recent Disasters of this Scale
Earthquake	Minimal	Earthquake with Richter magnitude of less than 6.5 and/or Modified Mercalli Intensity of less than VIII	Napa - 1342-CA (2000)
	Standard	Earthquake with Richter magnitude of 6.5 to 6.9 and/or Modified Mercalli Intensity of VIII to IX	Northridge - 1008-CA (1994), Nisqually - 1361-WA (2001)
	Catastrophic	Earthquake with Richter magnitude of 7.0 and/or Modified Mercalli Intensity of X or greater	San Francisco Earthquake (1906), Alaska Earthquake (1964)

**Table ES-3. Summary of Disaster Scale Assessment for MAT Process for Other Disasters (continued)**

<b>Disaster</b>	<b>Scale of MAT Process</b>	<b>Typical Disaster Magnitude and Extent</b>	<b>Examples of Recent Disasters of this Scale</b>
<b>Tornado</b>	<b>Minimal</b>	Tornado outbreak including one EF3 or EF4 tornado and/or impacting only one state	DR-1432-WI (September 2002), DR-1444-OH (November 2002)
	<b>Standard</b>	Tornado outbreak including one EF5 tornado and/or impacting two or more states	Midwest Tornadoes (May 1999), DR-1699-KS (May 2007)
	<b>Catastrophic</b>	Tornado outbreak including two or more EF5 tornadoes and/or impacting two or more states	Tornado Super Outbreak (April 1974)
<b>Human-Caused Hazards</b>	<b>Minimal</b>	Terrorist attack on one facility and impacting one state	N/A
	<b>Standard</b>	Terrorist attack on one or more facilities and impacting one state	Murrah Building, EM-3116-OK (April 1995)
	<b>Catastrophic</b>	Terrorist attack on two or more major facilities and/or impacting two or more states	9-11 Attacks, DR-1391-NY and DR-1392-VA (September 2001)

# **1. INTRODUCTION**

## **1.1 Background**

Among the activities that the Federal Emergency Management Agency (FEMA) carries out in response to natural disasters caused by events such as floods and hurricanes is the deployment of Mitigation Assessment Teams (MATs). These teams are formed by and operate under the direction of the Mitigation Division's Risk Reduction Branch, Building Science Section which is located at FEMA Headquarters (HQ). While the MAT program is managed from FEMA HQ, Regional Office, Joint Field Offices (JFO), and Regional staff play a key in both approving the deployment, funding, and staffing of each MAT. Members of a MAT generally include representatives from FEMA Headquarters and the FEMA Regional Offices (ROs); representatives from state and local governments; consultants who are experts in specific technical fields such as structural engineering, building design and construction, land use and floodplain management, and building codes; and other technical, administrative, and general support personnel.

Under the direction of a MAT Team Leader (TL) from FEMA's Mitigation Division, a MAT conducts field inspections and technical evaluations of the performance of buildings subjected to forces generated by the event. The primary purpose of the MAT's technical evaluations is to identify design practices, construction methods, and building materials that either failed under the forces generated by the event or were successful in resisting such forces. In addition, the MAT will often look at land use management and planning practices as well natural hazard identification and risk assessment. This is done in an effort to learn whether actions, other than those involved in designing and constructing buildings, were successful in minimizing damages from natural hazards. One of the major objectives of the MAT is to provide recommendations that can help reduce future damage from natural disasters. The MAT's findings and recommendations are aimed primarily at construction contractors, architects, engineers, planners and those local building officials who are involved in permitting, inspection, and development of building codes, as well floodplain and land use management provisions. Recommendations generally focus on improvements in local building design, construction, and land use, as well as the enhancement and improved enforcement of local building codes and floodplain and land use management provisions. Usually, the culmination of the MAT's efforts is a report that presents the team's observations, conclusions, and recommendations for improving building performance in future natural disasters.

## **1.2 Purpose**

The primary purpose of the MAT is to identify design practices, construction methods, and building materials that either failed under the forces generated by the event or were successful in resisting such forces. In addition, the MAT will often look at land use management and planning practices as well as natural hazard identification and risk assessment. This is done in an effort to learn whether actions, other than those involved in designing and constructing buildings, were

successful in minimizing damages from natural hazards. One of the major objectives of the MAT is to provide recommendations that can help reduce future damage from natural disasters. The MAT's findings and recommendations are aimed primarily at construction contractors, architects, engineers, planners, and those local building officials who are involved in permitting, inspection, and development of building codes, as well as floodplain and land use management provisions. Recommendations generally focus on improvements in local building design, construction, and land use, as well as the enhancement and improved enforcement of local building codes and floodplain and land use management provisions.

To make the MAT process an integral part of disaster response and hazard mitigation activities, FEMA has developed a proactive and comprehensive approach to the planning, pre-deployment, deployment, field assessment, and post-deployment functions of a MAT. Under this approach, whenever possible, the process for determining the need for assembling and deploying a MAT begins well in advance of the disaster event itself, and the potential members of the MAT will have already been identified, qualified, and placed on "standby" for deployment by FEMA. To consistently meet these objectives, and to address the need for coordination among the Federal, state, local, and private entities that may be called upon to serve on a MAT, FEMA has developed this Standard Operating Procedures (SOP) plan. This plan describes the major components of the MAT process, from pre-disaster planning activities, through deployment of MATs, to the Completed Report preparation and post-disaster follow up activities. This operations plan is titled the "Standard Operating Procedures for Building Performance Assessment Team Process". Because the needs of FEMA, the state, and the local government may vary from one disaster to another, and because FEMA will continue to gain experience with the MAT process, the SOP will be regularly evaluated and modified as necessary.

The information presented in the SOP is organized according to the major phases of the MAT process. The MAT process, as currently defined, consists of three major phases and two major support functions. The three major phases of the MAT process are as follows:

1. planning and pre-deployment
2. deployment and field operations
3. post-deployment

The two major support functions include:

1. general support and guidance
2. report preparation and guidance

The major phases of the MAT process are discussed in Sections 3 through 5, and the major support functions are discussed in Sections 6 and 7. The typical MAT process is illustrated in Figure 1. Definitions of terms used in this document are provided in Appendix H.

The operations described in this document are designed for responses to disasters caused by events for which FEMA has enough warning time to carry out the pre-event activities illustrated

in Section 4. Hurricanes, such as Ivan, which occurred in 2004, and Katrina, which occurred in 2005, are examples of this type of event. Users inquiring how to respond to short or no-lead-time events, such as the Northridge Earthquake and tornadoes, should proceed to Section 5.

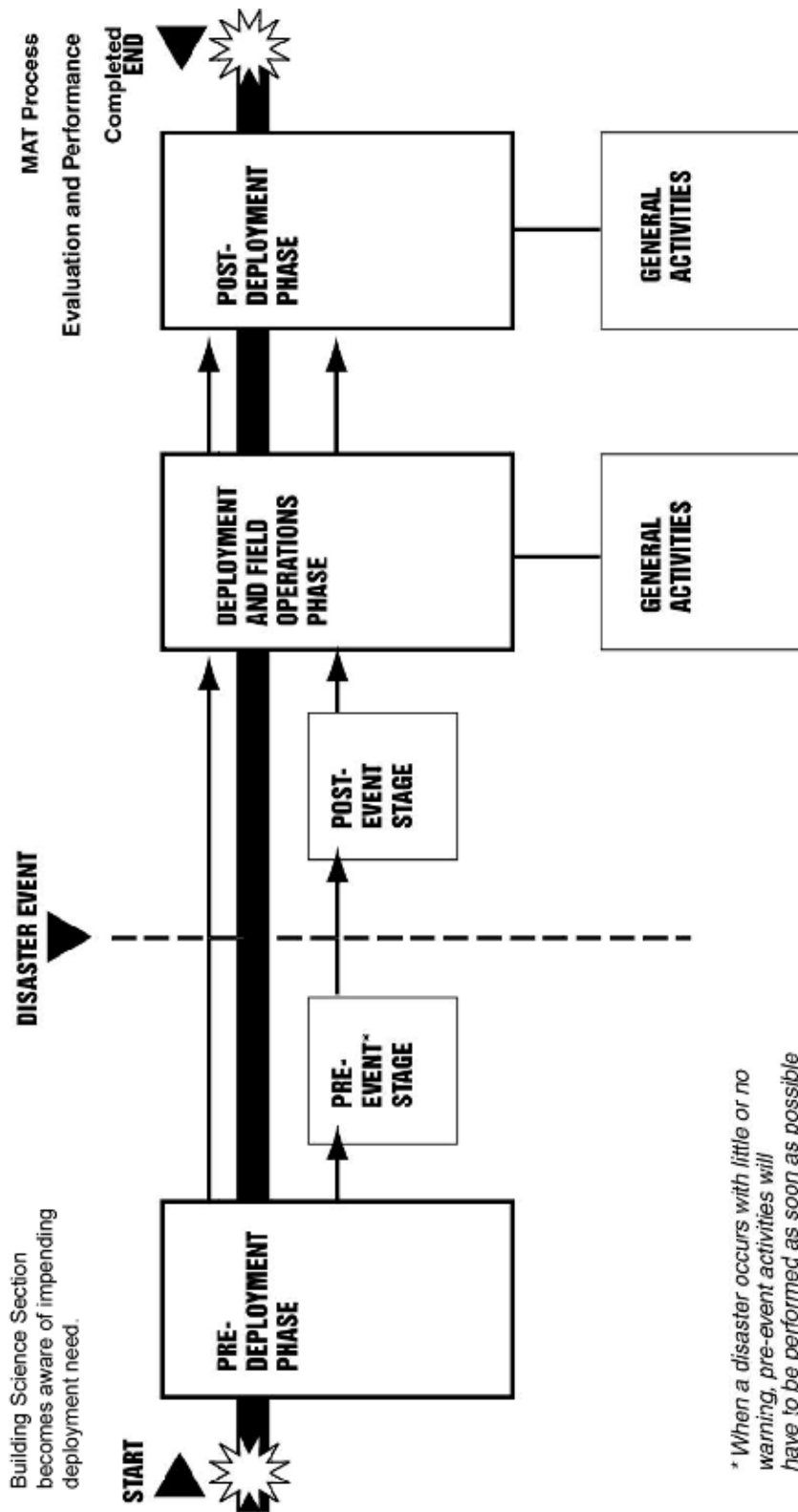
### **1.3 Scope Limitations**

The general scope of the MAT is focused on field inspections and technical evaluations of the performance of buildings subjected to forces generated by the event. Usually, the culmination of the MAT's efforts is a report that presents the team's observations, conclusions, and recommendations for improving building performance in future natural disasters. The geographic extent of the MAT field inspections and evaluations will depend on the size of the disaster area and other event-specific factors. However, regardless of the extent, the scope of the MAT inspections and technical evaluations is limited to identifying design practices, construction methods, and building materials that either failed under the forces generated by the event or were successful in resisting such forces. Due to the inherent time and cost limitations, the MAT inspections and evaluations cannot be all-inclusive, and the final MAT reports and deliverable are not intended to serve as a treatise on all aspects of the disaster.



# Typical MAT Process

(Applicable Only to Natural Disaster with Lead Time\*)



\* When a disaster occurs with little or no warning, pre-event activities will have to be performed as soon as possible during the post-event stage.

Figure 1 – Typical MAT Process

## 2. FEMA LOGISTICS

### 2.1 Background

The President may declare a national disaster when the states and local communities cannot by themselves adequately respond to the impacts from a natural disaster. The President's authority to provide assistance to communities and states for natural disasters comes from "The Robert T. Stafford Disaster Assistance and Emergency Relief Act, as amended" (Stafford Act). One of the actions the President may take under the Stafford Act is to provide technical assistance through the use of Federal agencies. The MAT is an example of the technical assistance that may be provided.

### 2.2 Roles of Key FEMA Personnel

#### Mitigation Branch Director

The authority of the President is delegated to the Federal Coordinating Officer (FCO) who is in charge of coordinating Federal, state, and community efforts in the disaster area. Depending on the magnitude of the disaster, the FCO will have deputies to handle specific areas of responsibility. One of these is normally the Operations Section Chief. Hazard Mitigation operates under the Operations Section as the Mitigation Branch. The lead Mitigation officer is the Mitigation Branch Director. In most large disasters, the Mitigation Branch Director is selected from Regional Staff. The Mitigation Branch Director, in consultation with Headquarters Mitigation staff and the Hazards and Performance Analysis (HPA) Group Supervisor, will request that a MAT be deployed to a disaster area. The final decision to activate the MAT program rests with the Mitigation Division at FEMA HQ.

In addition to being involved in the decision to deploy a MAT, the Mitigation Branch Director must ensure that funds are placed in the appropriate account to fund the MAT deployment. This process is called a *Request for Allocation Advice* (RAA). Presently, this allocation of funds is accomplished through FEMA's automated disaster management system called the National Emergency Management Information System (NEMIS).

#### Hazards and Performance Analysis Group Supervisor

In larger disasters, often a Hazards and Performance Analysis (HPA) Group will be established within the JFO. When this occurs, the Mitigation Branch Director often delegates most issues concerning the MAT to the HPA Group Supervisor. In situations where this occurs, the MAT will work directly with this individual, in lieu of the Mitigation Branch Director.

#### The MAT Project Officer (PO)

The MAT Project officer is directly involved in the decision as to whether to activate the MAT program. In the event that a decision is made to activate the MAT program, the MAT Project Officer must prepare three documents which include a MAT task statement-of-work (SOW), an independent government cost estimate, and a *Requisition and Commitment for Services and Supplies* (FEMA form 40-1).

#### Program Analyst

The Program Analyst, within the Risk Reduction (RR) Branch Business Analysis (BB) Team must certify on the 40-1 that funds are available.

#### Hazard Mitigation Specialist

The Hazard Mitigation Specialist, within the RR Grants Data Analysis and Tools Section will transmit the SOW to the Technical Support Contractor (TS Contractor) so that a cost proposal can be developed. After receiving the cost proposal, the Contract Specialist will conduct negotiations with the TS Contractor to award the task.

#### Contracting Officer (CO)

Because of the urgency of deploying the MAT in a timely manner, the Mitigation Division will normally ask the Office of Chief Procurement Officer, Mitigation Branch, to issue a verbal authorization to the TS Contractor to incur expenses. The Branch Chief of the Office of Chief Procurement Officer, Mitigation Branch, acting in their capacity as the Contracting Officer may issue a verbal authorization to incur expenses to the TS Contractor until the final task order is awarded.

#### MAT Team Leader (TL)

The MAT Team Leader (TL) will always be a full-time employee of FEMA. In most cases, the team leader will be selected from the technical staff from the Building Science Section at FEMA HQ. The TL may or may not be the MAT Project Officer. The TL shall be the task monitor and have the authority to lead the team's efforts within the scope of work for the MAT deployment.

#### MAT Regional/JFO/TRO Representative

MAT Regional/JFO Representatives are selected by the Mitigation Branch Director (either at the Region, at the JFO, or both) to act as the liaison between the MAT, JFO, Transitional Recovery Office (TRO), the Regional Office, and the effected states and communities. The Regional/JFO Representative coordinates all activities related to these entities. This includes notifying state and local officials of the upcoming movement of the MAT, attempting to include state and local representatives on the MAT, and attempting to arrange for meetings with state and local officials.

#### MAT Media Affairs Liaison

A MAT Media Affairs Liaison is selected by the JFO Public Information Officer (PIO) to act as



the liaison between the MAT, Joint Information Center (JIC) staff in the JFO and the media. All media contacts are referred to the Media Affairs Liaison.

## **2.3 Overview of FEMA Disaster Operations**

### Background Checks and Badges

FEMA background checks and badges are important tools during disaster operations to control public access to the JFO/TRO and facilitate FEMA access to disaster sites. For the purposes of this SOP, it is assumed that all FEMA employees used on the MAT have completed a background check and been issued a FEMA badge in accordance with FEMA-DHS security policy. When time and circumstances allow, it is recommended that TS Contractor employees that provide frequent support to FEMA and are likely to be deployed on a MAT complete a background check in order to obtain a FEMA badge in advance. For TS Contractor employees, the background check and badging process typically consists of the following basic steps:

- Step 1: Contact the MAT Team Leader and/or the Contracting Officer's Technical Representative (COTR) to obtain approval to apply for a badge and for a login to the Electronic Questionnaire for Investigations Processing (e-QIP) system.
- Step 2: Prepare and submit an e-QIP profile online using the login from Step 1; which includes e-QIP signature pages for SF 85P, Questionnaire for Public Trust Position.
- Step 3: Complete the FEMA Investigation Packet Checklist; which includes the following information:
  - a) e-QIP signature pages for SF 85P, Questionnaire for Public Trust Position
  - b) Two sets of fingerprints on FD-258 Applicant Fingerprint Cards
  - c) One signed copy of the Fair Credit Reporting Act release Form
  - d) One signed copy of DHS Form 11000-6 (08-04) Non-Disclosure Agreement
- Step 4: Mail the FEMA investigation packet and checklist completed in Step 4 to the following address:

FEMA Personnel Security  
500 C Street, SW, Room 514  
Washington, DC 20472  
Attn: Ramona Samuel or Helen Canady  
Case Management Unit
- Step 5: Contact FEMA Personnel Security about 2 to 3 weeks after Step 4 is completed, and confirm that FEMA has completed the background check based on the information provided in the FEMA investigation packet and checklist.
- Step 6: Once Step 5 is completed, complete Part I of FF 12-62, FEMA-DHS Personal Identification Verification (PIV) Credential and have the form signed by the PIV sponsor, usually the COTR.
- Step 7: Once Step 6 is completed, contact the local FEMA office to make an appointment to be badged. Remember to bring the signed PIV Credential along with two forms of

government-issued identification to the badging appointment. Also, please note that many FEMA offices require contractors to attend a 2-hour security briefing prior to issuing a badge.

Copies of forms needed for FEMA background checks and badging are provided in Appendix B. Note that if an individual TS Contractor has an active security clearance, Steps 1 through 5 of the process may be eliminated by having their security officer send a letter to the FEMA Personnel Security office with the individual's security information.

Since the FEMA background check and badging process can take several weeks, it may not be possible for all non-FEMA staff to be badged prior to being deployed in the field for a MAT. Current FEMA policy permits TS Contractor employees and other staff to be used on a MAT even if they have not been issued a FEMA badge, provided that they have signed the MAT Confidentiality Agreement provided in Appendix C (refer to Section 3.4 for details). In addition, TS Contractor employees or other staff that have not been badged must be accompanied by an escort whenever they enter a JFO/TRO. An escort can be anyone who has been issued a FEMA badge as a FEMA employee or TS Contractor employee.

#### Notice of Arrival

The MAT Team Leader (TL) and MAT Team Manager (TM) should coordinate with the Federal Coordinating Officer (FCO) and State Coordinating Officer (SCO) to notify them of the arrival of a MAT. Whenever possible, the MAT should meet at the JFO/TRO prior to initiating field work and meet with the FCO and SCO to gain a better understanding of current disaster operations and local issues related to hazard mitigation.

### **3. MAT PROCESS SUPPORT ACTIVITIES**

FEMA has recognized that it must implement ongoing preparedness activities to support the MAT process. These activities will help FEMA, other government representatives, and the TS Contractor and its subcontractors carry out and support FEMA's mitigation and recovery efforts. Support activities identified by FEMA, for which standard operating procedures exist or are being developed, include the following:

- Developing and maintaining a national roster of local and other technical experts who have agreed to be available to serve as members of or advisors to a MAT (See <http://www.fema.gov/rebuild/mat>).
- Establishing contractual or cooperative agreements with individuals, firms, model building code groups, and/or other agencies whose services are likely to be called upon to support the MAT process (See Section 4.1.5).
- Developing guidelines for the MAT members concerning (1) responding to requests in the field for interviews with the news media and (2) addressing the general public when conducting field inspections.
- Establishing policies and guidelines that address the need for confidentiality in dealing with the MAT's preliminary findings, especially during the development of the MAT report.

The activities listed above will increase the effectiveness of the building performance assessment process and improve FEMA's preparedness and deployment activities.

#### **3.1 National Roster / Database of Local and Other Technical Experts**

The effectiveness and credibility of a MAT are greatly enhanced when the team includes members who have one or more of the following:

- Expertise in an appropriate technical area (e.g., structural engineering, building construction, code development).
- A strong knowledge of local construction practices and building codes (local, state, and national).
- Specific expertise regarding the potential hazards (e.g., wind, coastal flooding, earthquakes) in areas where the MAT is likely to be deployed.
- Knowledge of FEMA's major programs (e.g., National Flood Insurance Program, Hazard Mitigation Grant Program under Section 404 of the Stafford Act).

The TS Contractor does not wait until a disaster has occurred to identify and secure the services of the required experts. Instead, as part of its ongoing disaster preparedness and technical assessment activities, the TS Contractor establishes and maintains an evolving roster/database of local and national experts (e.g., individual consultants, academicians, local and state representatives) who are qualified to serve as members of MATs. Information received from

FEMA and the RO staff concerning qualified local experts is continually added to this MAT database as appropriate. The experts included in the MAT database have a wide range of technical expertise in such disciplines as structural engineering, architecture, building construction, building codes, geotechnical engineering, construction cost estimating, residential floodproofing, building relocation, and building elevation. Refer to <http://www.fema.gov/rebuild/mat> for additional information.

### **3.2 Contractual Agreements and Reimbursement Guidelines**

Contractual agreements are the means by which the TS Contractor secures the services of professional consultants who provide technical expertise and logistical support during the MAT process. When a disaster occurs, conflicting demands may compete for these services; therefore, it is important that the TS Contractor already have commitments from the necessary consultants. Having such commitments in the form of contractual agreements ensures that the necessary services will be provided when needed and benefits all parties by defining the services and documenting any special requirements anticipated. Because the specific duties of individual team members may vary according to disaster conditions, all agreements should be general, so that changes can be made as necessary.

For professional consultants requested by FEMA Headquarters and employed by private companies, the TS Contractor can provide reimbursement of MAT-related labor and expenses as part of their contractual agreements. However, for consultants requested by FEMA Headquarters and employed by Other Federal Agency (OFA), code groups, or non-profit organizations, the TS Contractor will need to consult with FEMA Headquarters on reimbursement of MAT-related labor and expenses in their contractual agreements. This is because FEMA regulations often restrict or prohibit reimbursement of labor and expenses for staff employed by OFA, code groups, and non-profit organizations.

### **3.3 Public Relations and Media Relations**

All disasters, especially those resulting in extensive damages to private and public property, present numerous challenges to FEMA and how it responds to the immediate needs of communities and individual property owners. Among those challenges is the response given to media questions concerning the nature and progress of FEMA's recovery efforts.

The work of a MAT, while providing long-term benefits in the area of hazard mitigation, may not be seen as beneficial to those more concerned with immediate relief. Also the findings of a MAT, which address design processes, construction methods and materials, quality of workmanship by building contractors, and regulatory activities of local governments, may prove controversial in the emotionally charged atmosphere that follows a disaster. Under these conditions, there will always be potential for misunderstanding, misrepresentation, ill will, and negative publicity, any of which will hamper FEMA disaster recovery activities. For these reasons, it is particularly important that the MAT members follow established guidelines when contacted by representatives of the media. This is especially applicable while carrying out highly visible field inspections/assessments.

All MAT members are to refer all media inquiries to the MAT Media Affairs Liaison. When in the field, a MAT member may only respond to media questions when authorized by the MAT Media Affairs Liaison. Additionally, no field notes, logs, working documents, or draft presentations of findings may be released to the media without the express permission of FEMA. The release of any final written product must be approved by FEMA.

### **3.4 Confidentiality Requirements**

The findings of the MAT must be kept confidential throughout the entire MAT process. MATs include a variety of members with potentially different viewpoints and allegiances. Some team members may be tempted to use the team's work-in-progress for their own purposes, which may or may not be consistent with FEMA's objectives. Also, the results of the MAT process are documented in a series of draft reports issued for review and comment by the appropriate audience and not intended for general distribution. Therefore, FEMA has developed a mechanism for ensuring the confidentiality of the MAT's findings called a *Confidentiality Agreement*. A sample Confidentiality Agreement is provided in Appendix C.

All non-governmental members of a MAT must sign confidentiality statements before participating on the team. These statements are included in all initial contractual and cooperative agreements entered into as part of ongoing preparedness activities and in any subsequent contracts and agreements entered into at the time the MAT is formed. Signed confidentiality statements are also obtained from any logistical support personnel, outside vendors, and other parties involved in the MAT process.

All draft versions of MAT reports and all memorandums that transmit draft MAT reports to authorized reviewers must include confidentiality notices. Limitations regarding the content of draft and final MAT reports are based on the Privacy Act. No personal information (e.g., names, and telephone numbers) are to be included. In general, no information beyond the type generally released under the Freedom of Information Act (FOIA) should be included in either draft or Completed Reports.

All draft versions of MAT reports must include a title page on which the following statement appears in bold type:

**“This DRAFT report presents the preliminary findings of the MAT. The observations, conclusions, and recommendations presented herein are subject to review and revision. They are therefore to be considered a work-in-progress and are not appropriate for general dissemination. This report is to be provided only to those persons authorized by FEMA and is to be kept confidential by them.”**

All memorandums that transmit draft MAT reports to authorized reviewers must include the following notice in bold type:

**“The enclosed report is a DRAFT issued only to authorized reviewers. It is not to be copied or disseminated, and its contents are to be kept confidential.”**

### **3.5 Field Safety**

As discussed in Sections 4 and 5, activities that occur both before and during MAT deployment involve fieldwork at disaster sites. Working in and around damaged buildings entails hazards not usually encountered in other types of fieldwork. Also, damage to roads, telephone lines, and other infrastructure may make it difficult to obtain emergency medical treatment. Health and safety requirements (either explicit or implicit) in any contractual agreements between FEMA and the TS Contractor shall be adhered to by the TS Contractor and its subcontractors and consultants.

The responsibilities of the TS Contractor include identifying any OSHA, state and local health and safety requirements applicable to activities in the disaster area and providing those requirements to all personnel who will be performing field work in conjunction with the MAT process. The TS Contractor shall normally provide OSHA-approved hard hats. Individual team members normally are required to provide adequate safety foot wear.

An additional consideration is that it may not always be possible for the team to obtain the property owner's permission to enter and inspect a damaged building. Therefore, whenever possible, the local official serving as a member of the MAT will be present during field operations. Having a local official present when entering a building without the owner's permission may help the MAT avoid problems regarding the legality of such actions. Additionally, it may help lessen the likelihood that property owners attempting to protect houses and their contents from looters and vandals will confront team members.

## **4. PLANNING AND PRE-DEPLOYMENT PHASE**

The planning and pre-deployment phase consists of those actions undertaken by FEMA after it determines that a disaster (such as a hurricane, storm, or riverine flood) is imminent but before a MAT is deployed. The planning and pre-deployment phase consists of two stages: the pre-event stage and the post-event stage. A typical MAT process timeline is shown in Figure 2.

### **4.1 Pre-Event Stage**

Implementation of the pre-event activities described in this section, enables FEMA to anticipate potential disasters and be better prepared to respond effectively once a disaster has occurred. Identifying the resources that will be needed and planning for their acquisition will result in significant gains in operational efficiency and effectiveness for FEMA's Mitigation Division, the ROs, and the affected communities. Activities conducted by FEMA staff and consultant contractors in the pre-event stage include the following:

- early monitoring of impending storm/flood events and assessment of potential areas of impact
- early estimating of potential types and severity of damages
- early coordination with ROs
- early coordination with state and local officials
- early coordination with TS Contractor

Pre-deployment activities are funded through an annual allocation of non-disaster-specific funds. This allows the TS Contractor to conduct pre-deployment activities without requiring a verbal authorization to incur expenses directly related to a specific disaster.

The activities listed above, which are described in Sections 4.1.1 through 4.1.5 can be carried out before an impending event only when FEMA has sufficient warning of the event. In responding to disaster-causing events that strike with little or no warning, such as earthquakes or tornadoes, FEMA will find that some activities, such as pre-event monitoring, are precluded. Other activities such as early estimation of damages, early coordination with regional offices and local officials, and early selection of technical experts, must be carried out as soon as possible after the event. Therefore, the following activities may be modified as dictated by disaster conditions and FEMA needs.

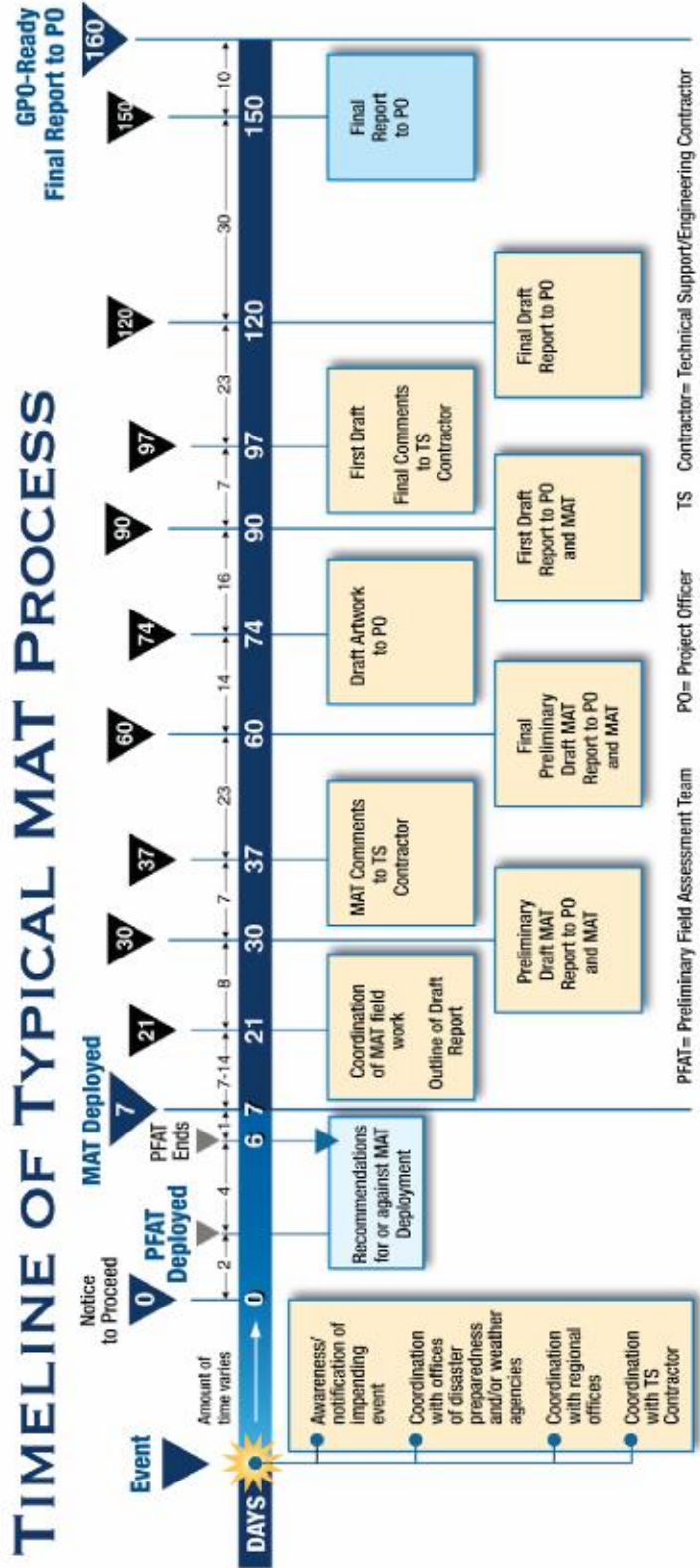


Figure 2 – Timeline of Typical MAT Process



#### 4.1.1 Early Monitoring of Impending Storm/Flood Events

Early monitoring of the progress of impending hurricanes or other major storms provides FEMA with the information it needs to make preliminary determinations concerning the following:

- the potential storm track and the areas that may be affected by the storm
- the type and magnitude of the hazards that may be generated by the event, e.g., high winds, wave action, flooding, beach erosion
- the projected storm intensity/return frequency of the event

With this preliminary information, FEMA staff, in conjunction with the TS Contractor, may be able to anticipate the magnitude of the resulting damage. Then, using the MAT database of local and other technical experts (see Section 5.2), FEMA and the TS Contractor can identify those experts who are in a position to quickly gather additional field information in the affected area.

Several sources of information are readily available to FEMA for keeping abreast of impending hurricane or flooding events. One such source is the news media. News reports and related information disseminated to the public by television, radio, or newspapers are useful, inexpensive means of tracking storm activities. Most newspapers are available on the Internet. However, it is important to note that information obtained from the news media may be inaccurate or incomplete.

When notified of an impending event that may result in a natural disaster, FEMA and its TS Contractor will monitor news coverage about that event. Several media sources should be consulted, including the major television networks such as ABC, CBS and NBC; the cable networks such as CNN, Headline News, and C-SPAN, the Weather Channel; national radio networks; major newspapers and news publications; and, associated web pages. The primary objective of using the media is to stay abreast of changing event conditions.

Another primary source of information is the Internet. For hurricanes, the National Hurricane Center ([www.nhc.noaa.gov](http://www.nhc.noaa.gov)) provides satellite imagery, forecasts and projected storm tracks. In addition, a FEMA liaison at the National Hurricane Center provides FEMA with current weather forecasting and storm tracking information. This information is usually very reliable. For other events, weather service information is available on the Internet. For wind events, a web site can provide real-time weather information. For example, the National Data Buoy Center (<http://www.ndbc.noaa.gov>) is a valuable source of wave height and wind speed data for many offshore buoys. These and other web sites can be used to track hurricanes before they make landfall on the United States. Other sites such as <http://www.gobeach.com/hurr.htm> allow private parties and government officials on certain Caribbean Islands to post information on the damage specific to these areas. For example, during Hurricane Georges, this information included eyewitness accounts of damage from the storm, which was used to help assess some of the damage to Puerto Rico and the U.S. Virgin Islands.

#### 4.1.2 Early Estimation of Potential Types and Severity of Damages

With information about the types of construction in the potentially affected area and the nature and magnitude of the expected hazards, FEMA may be able to estimate the extent of the possible damage and draw preliminary conclusions about the need to deploy one or more MATs. These efforts require extensive coordination with the RO. Recent years have seen increased use of the following modeling programs to determine potential impacts from hurricanes, floods and earthquakes.

- FEMA Hazards US – Multi-Hazard (HAZUS-MH): a FEMA GIS-based software program developed in coordination with the National Institute of Building Sciences (NIBS) that estimates potential losses from earthquake, hurricane wind, and flood events.
- Sea, Lake and Overland Surges from Hurricanes (SLOSH): a computerized model run by the National Hurricane Center (NHC) to estimate storm surge heights and winds resulting from historical, hypothetical, or predicted hurricane events.
- Hurricane Evacuation (HURREVAC): a restricted-use computer program funded by FEMA and USACE for government emergency managers to track hurricanes and assist in evacuation decision-making for their communities based on real-time data from National Hurricane Center (NHC) and other sources.

In addition to the modeling programs listed above, FEMA also employs the following sources of information to estimate potential types of damage and assess potential study areas for MAT deployments:

- Homeland Security Information System (HSIN): a restricted-access platform that can be used to provide information on various emergencies and disasters.
- National Emergency Management Information System (NEMIS): a restricted FEMA database that can be used to review reports to critical facilities and public infrastructure that were damaged in previous declared disasters.
- Enterprise Data Warehouse: a database of Hazard Mitigation Grant data that can be used to locate mitigation projects that may reveal potential building success stories.
- Community Information System (CIS)/Mapping Information Platform (MIP): online systems that can be used to find Letters of Map Revision (LOMRs) in order to find areas of new construction in the floodplain.
- NOAA damage assessment flights: flights over the damaged areas conducted by the National Oceanographic and Atmospheric Administration (NOAA) immediately following a major hurricane, depending on weather and daylight conditions. The flight imagery includes GIS-ready images graphics that are ortho-rectified and made available 6-8 hours after landing from the NOAA website ([www.noaa.gov](http://www.noaa.gov)) along with preplanned flight lines and coverage areas.

In order to facilitate early coordination with the TS Contractor, FEMA Headquarters should provide key TS Contractor staff with access to the modeling programs and information sources listed in Section 4.1.2 whenever possible.

Typically, FEMA deploys MATs for code-level events when it believes that the conclusions drawn from field observations will support design, construction, and inspection recommendations of national significance. For example, the MAT deployed in response to the Oklahoma City bombing investigated the reciprocal benefits of blast-resistant design and earthquake-resistant design, an issue with potential significance for the design of critical facilities nationwide. In 1999, a MAT was deployed to study the tornado damage in Oklahoma and Kansas to provide technical assistance in the rebuilding of the communities by implementing “safe-rooms” and other wind-resistant construction practices. For hurricanes, a MAT is usually deployed for those storms classified as “major,” Category 3 or stronger on the Saffir-Simpson scale.

#### 4.1.3 Early Coordination with FEMA

The Project Officer (PO) is a member of the FEMA Mitigation Division staff in Crystal City, VA. The Team Leader (TL) is normally also from FEMA HQ in Crystal City, VA. The MAT TS Contractor Project Manager (TSPM) is a member of the TS Contractor staff who has been approved by the PO; the TSPM is responsible for all support services provided to the Mitigation Division by the contractor and its subcontractors. The MAT Team Manager (TM) is a member of the TS Contractor staff who has been approved by the PO. The TM is responsible for managing the day-to-day operations of the MAT, including logistical issues. The PO and the TL may be the same person; the PM and the TM may be the same person. In the early stages of a disaster, the TSPM, or their designee, is responsible for early coordination with FEMA.

Early coordination among the PO, TL, TSPM, TM and RO responsible for the potentially affected area establishes lines of communication that will be essential throughout the MAT process. This coordination also allows FEMA to determine the availability of regional staff and resources that will be needed during all phases of the MAT process.

#### 4.1.4 Promoting Federal, State and Community Participation in the MAT Process

FEMA’s coordination with officials from Other Federal Agency (OFA), code groups, and non-profit organizations is carried out through the PO and/or the TL (with assistance from the TSPM or TM when appropriate) and begins during the pre-event stage, if possible, in the pre-deployment phase. For hurricane and flood disasters, FEMA and the TS Contractor may seek to include representatives from entities such as the US Army Corps of Engineers (USACE), the Environmental Protection Agency (USEPA), the National Oceanographic and Atmospheric Administration (NOAA), the Institute for Building and Home Safety (IBHS), the International Code Council (ICC), and the National Association of Homebuilders (NAHB) as part of the MAT field team and/or to provide peer reviews of MAT reports and technical recovery advisories. For earthquake disasters, FEMA and the TS Contractor may seek to include representatives from

additional agencies such as the US Geological Survey (USGS), the Applied Technology Council (ATC), and the Earthquake Engineering Research Institute (EERI). In addition, if the hazard event is nationally significant, the National Institute of Building Sciences (NIST) may also deploy under the National Construction Safety Team Act. Coordination with NIST during the Hurricane Katrina MAT was important and yielded useful results. Early coordination is critical to ensure availability, reduce overlap with like activities, facilitate utilization and, if necessary, establish reimbursement of staff from other Federal agencies.

FEMA's coordination with state and local officials is carried out through the RO (and the JFO or TRO when appropriate) and begins during the pre-event stage, if possible, in the pre-deployment phase. State and community participation is essential to the success of the MAT. It is the responsibility of the RO Representative to work through the RO and JFO to secure the participation of state and community representatives. This coordination serves several purposes:

- It helps assure community officials that FEMA is ready and willing to provide technical assistance.
- It provides a means by which FEMA staff can explain the MAT process, its objectives, and its benefits.
- It enables FEMA staff and community officials to begin planning for the involvement of local and state government officials, if possible, in the post-event stage.
- It helps the RO and the JFO in providing any media support personnel to assist the MAT.

#### 4.1.5 Early Coordination with the Technical Support Contractor

Coordination between FEMA's Mitigation Division and the TS Contractor allows FEMA to identify key personnel and to determine their availability and assignments. Pre-event coordination equips FEMA with the information it needs to quickly select MAT members and other participating personnel and to begin planning for activities that will be necessary after the disaster occurs. The TS Contractor can inform FEMA of additional resources that may be available and that may be called upon when necessary.

Initial coordination with local and other experts also enables FEMA staff (supported by the TS Contractor) to make final selections of experts who can participate in the activities carried out post-event or who can serve as members of the MAT, if deployment is necessary. The MAT database contains a detailed list of experts who have been previously qualified to support such efforts, (see Section 5.1), and is used by FEMA and the TS Contractor.

For example, before landfall of a major hurricane, FEMA's PO or TL contacts the TS Contractor and authorizes them to begin preparing for a MAT. Initial coordination by the TS Contractor typically includes the following tasks:

- Establishing daily conference calls between representatives of FEMA Headquarters, the TS Contractor, and other entities requested by FEMA PO or TL to discuss the projected path of the storm, anticipated damages, and potential MAT activities. Conference calls may be set up using the FEMA conference system with a pass code established by the FEMA operator (202-566-1600) or using a toll-free conference number and pass code established by the TS Contractor.
- Preparing daily status reports based on information collected on the internet and other sources that include the projected path of the storm, anticipated flood and wind damages, and potential MAT activities. Whenever possible, the daily status reports should be submitted to participants in the daily conference calls listed above approximately 1 hour before the calls.
- Assisting FEMA with lists of potential MAT study topics based on the anticipated type and magnitude of damage.

As part of the initial coordination, the PO usually gives the TS Contractor a list of skill classifications for potential team members (e.g., structural engineer, wind engineer, architect, technical writer). The TS Contractor will then query the MAT database to find appropriate people and will contact them to inquire about their availability. The TS Contractor then submits a list of names and corresponding resumes to FEMA for approval. From that list, a standby team is selected. The TS Contractor will then contact the MAT members and tell them of their status.

Usually, potential MAT members will have many questions after they have been selected. A Pre-Deployment Package (Appendix A) has been created to answer some of these questions.

Pre-event activities include initial coordination with previously identified local technical experts. Local technical experts are chosen for their intimate knowledge of local hazards and construction practices, and their strategic location in or near the expected damage area. Local experts are in a position to help FEMA assess anticipated damage and draw preliminary conclusions about the type and value of the technical information that could be gathered by a MAT. During severe storms, communicating with local technical experts is usually difficult because they are busy fulfilling the duties of their jobs and preparing their home and families for the impending storm.

In addition to coordinating with experts in the potentially affected area, FEMA coordinates with other experts who may not be in that area but who can contribute essential knowledge and skills. Such experts would include members of Federal, state and regional agencies; model building code and professional organizations; and building and construction industry groups. For example, before Hurricane Georges made landfall on Puerto Rico, FEMA consulted an expert on construction in Puerto Rico to determine the expected damage to residential construction.

When warning time is sufficient, FEMA also investigates the possibility of obtaining pre-event aerial videography or aerial photography of the area that may be affected by the impending event. Pre- and post-event low-altitude aerial videography or photography can provide an excellent basis for “before-and-after” comparisons of damaged buildings and can be useful in the assessment of storm impacts. Digital videography tied to the Global Positioning System (GPS) may yield excellent products for before-and-after comparisons. FEMA and/or the TS Contractor consult with local technical experts to determine the availability and cost of such services.

## **4.2 Post-Event Stage and Assessment of Scale**

During the post-event stage, FEMA determines whether deployment of a MAT is appropriate and, if so, what the scale, composition, and activities of the team will be. No deployment can occur until the President of the United States issues a disaster declaration and any search and rescue activities are completed. Several activities are associated with this stage:

- assessing the scale of the disaster
- deploying a Preliminary Field Assessment Team (PFAT) or Pre-MAT
- assessing potential logistical needs of the PFAT and MAT
- determining the composition of the MAT
- assessing hazards to MAT members
- assessing the information needs of affected communities

The scale of the disaster – and the extent of the MAT efforts – will be assessed based on the magnitude and extent of the disaster effort. As shown in Table 1, there are three basic disaster scales used to assess the MAT process: minimal, standard, and catastrophic.

**Note that the requirements of this SOP are based on a standard-scale MAT effort, unless noted otherwise.**

As noted previously, when a disaster event occurs with little or no warning, many of the coordination activities described in Section 4.1 will have to be carried out as soon as possible after the event. This is especially true for any coordination necessary for forming and deploying a PFAT (see Section 4.2.1). It should also be noted that the procedures for carrying out the standard post-event activities can be affected by the duration of the event. For short-term events, such as a hurricane, it may be necessary to conduct a single PFAT and to assess hazards and special needs only one time prior to the formation of the MAT. For longer-term events, such as extended periods of flooding, it may be necessary to follow up with new assessments as field conditions change. When there is no warning, such as a tornado or earthquake, there will usually be no PFAT deployment. Refer to Unit 9 for additional details on MAT procedures for tornadoes and earthquakes.

**Table 1. Disaster Scale Assessment for the MAT Process**

<b>Scale of MAT Process</b>	<b>Typical Disaster Magnitude and Extent</b>	<b>Examples of Recent Disasters of this Scale</b>
<b>Minimal</b>	Category 1 or 2 Hurricane and/or impacting only one state	Hurricane Georges in Puerto Rico (1998), Hurricane Fran (1996)
<b>Standard</b>	Category 3 Hurricane and/or impacting one or two states	Hurricane Charley (2004), Hurricane Ivan (2004)
<b>Catastrophic</b>	Category 4 or 5 Hurricane and/or impacting two or more states	Hurricane Katrina (2005)

#### 4.2.1 Immediate Post-Disaster Response Activities

Immediately after a disaster strikes, post-disaster response activities begin with local response activities such as dispatching of police, fire and emergency services, activating of one or more Emergency Operations Centers (EOCs), and declaring a state of emergency. For floods and hurricanes, immediate post-disaster response activities can often be planned and initiated before the flood or storm occurs; however, for other disasters that occur with little or no warning, immediate disaster response activities cannot be initiated until after disaster strikes.

In some cases, if a disaster is clearly beyond state and local capabilities and resources for effective response, the President may declare a major disaster or emergency before a storm makes landfall. However, in most cases, the Governor or Acting Governor of the state must send a request to FEMA conduct a joint Preliminary Damage Assessment (PDA) with the state to verify damage and estimate the amount of supplemental assistance that will be needed. After this assessment is complete, if the Governor believes that Federal assistance is necessary, the Governor sends the request letter to the President, directed through the Regional Administrator (RA) of the appropriate FEMA region. The request is reviewed by the RA and forwarded with a recommendation to the Administrator of FEMA who, in turn, makes a recommendation to the President. The President makes the decision whether to declare a major disaster or emergency. After the initial declaration, the person designated by the Governor as the Governor's Authorized Representative (GAR) may make requests for additional areas to be eligible for assistance or for additional types of assistance as deemed necessary.

The Presidential declaration will designate the jurisdictions eligible for assistance and the types of assistance available. With the declaration, a Federal Coordinating Officer (FCO) is appointed to coordinate all Federal disaster assistance programs administered by FEMA, other Federal departments and agencies, and voluntary organizations. The Governor may appoint a State Coordinating Officer as the FCO's counterpart. The State Coordinating Officer and the GAR are generally the same person.

FEMA also establishes a Joint Field Office (JFO) in or near the disaster area. This office is used by Federal and State staff and is the focal point of disaster recovery operations.

FEMA and the State manage the implementation of the Public Assistance (PA) Program from the JFO.

#### 4.2.2 HMTAP Rapid Response Tasks

Once a declaration is made, FEMA may issue a series of rapid response tasks to its TS Contractor through the Hazard Mitigation Technical Assistance Program (HMTAP). Following a flood or hurricane event, the HMTAP rapid response tasks often involve flagging and surveying of riverine and/or coastal high water marks, conducting an inland wind assessment of the impacted area, defining the boundary of wind versus water damage, initial assessments of structural damage, and collection of other perishable data that can be useful to the MAT process. In some cases, the HMTAP rapid response tasks for initial assessments of structural damage can be modified to deploy a Preliminary Field Assessment Team (PFAT). Refer to Section 4.2.3 for details regarding PFAT deployment.

#### 4.2.3 Deploying a Preliminary Field Assessment Team

The PFAT, commonly referred to as a “Pre-MAT”, conducts the first field inspection. A standard PFAT is performed on a macro scale by a small team usually consisting of (1) a FEMA Mitigation Division representative and/or a RO representative acting as the TL, (2) a local expert and/or local official, (3) a TS Contractor representative, who is usually the proposed MAT TM, and (4) one or two additional TS contractor representatives specializing in floodplain management or engineering. Refer to Table 2 for a summary of PFAT staff requirements and durations as a function of MAT disaster scale. The purpose of the PFAT is to further refine FEMA’s initial estimates of the types and extent of damage and the value of the information likely to result from deployment of a MAT. The assessment also helps FEMA verify and, if necessary, revise its original operations plan.

The PFAT must quickly obtain a broad picture of the amounts and types of damages that have occurred. The objective of the PFAT is to recommend whether or not a MAT should be deployed and what the composition of the team should be.

Once deployed, the PFAT quickly collects information on the damage, including joint FEMA-state Preliminary Damage Assessments (PDAs). Field and/or aerial assessments are used collectively with other existing data in the determination of a MAT deployment. FEMA has developed a draft checklist which the TL has the option of using as a guide for conducting the PFAT (Appendix D). This checklist provides an organized and objective method for recording information on types of damage, distribution of damage, building successes, basis for deploying/not deploying a MAT, required MAT expertise, and potential field hazards.



**Table 2. PFAT Staff Requirements and Durations by MAT Disaster Scale**

PFAT Member	Affiliation	Required & Optional Staff per MAT Disaster Scale		
		Minimal	Standard	Catastrophic
Team Leader (TL) or designee (RO)	FEMA	Required	Required	Required
Local expert/Local official	State/Local	Required	Required	Required
Team Manager (TM)	TS Contractor	Required	Required	Required
Floodplain management specialist	TS Contractor	Not Required	Optional	Required
Building envelope expert	TS Contractor	Not Required	Optional	Optional
Coastal engineer/Hydrologist	TS Contractor	Not Required	Optional	Required
Structural engineer	TS Contractor	Not Required	Optional	Optional
<b>Subtotal - Required Staff</b>		<b>3</b>	<b>3</b>	<b>5</b>
<b>Subtotal - Optional Staff</b>		<b>0</b>	<b>4</b>	<b>2</b>
<b>Total Staff - Required Staff + 1/2 Optional Staff</b>		<b>3</b>	<b>5</b>	<b>6</b>
<b>Typical Duration in Field (days)</b>		<b>3</b>	<b>5</b>	<b>7</b>
<b>Aerial Assessment Required</b>		<b>Optional</b>	<b>Required</b>	<b>Required</b>

Aerial assessments can be crucial to determining the extent and type of damage incurred. U.S. Blackhawk helicopters are perfectly suited for conducting such assessments because they have six seats that provide an excellent view. However, military/Other Federal Agency (OFA) assets can be difficult to come by and separate contracts should be planned for in the event government/military overflights are not possible. After this rapid assessment has been completed, the PFAT meets with both FEMA and state representatives to report observations and make recommendations concerning the deployment of a full MAT.

The magnitude of the event, the size of the affected area, and the extent of damage are important considerations in the determination of whether to deploy a MAT and what the scale and composition of the team(s) should be. The primary consideration, however, is whether the information a MAT would provide will be valuable for FEMA's hazard mitigation and loss reduction activities on a national level. Therefore, proper identification of the types of damage is of particular importance. If, based on the results of the PFAT, FEMA expects that conclusions regarding the reasons for specific types of damage will lead to nationwide improvements in building methods and materials or in local regulatory activities, then the deployment of a MAT is worthwhile. A MAT will also be worthwhile if its findings are likely to help FEMA assess the success of past mitigation activities.

The TL must brief the Mitigation Branch Director on the PFAT's findings and recommendations as to whether a MAT should be deployed or not be deployed. The TM will ensure that the TL has the necessary information and presentation materials to conduct this briefing. A final decision to deploy a MAT rests with the Mitigation Branch Director, PO, TL, and the Mitigation Division management at FEMA Headquarters.

#### 4.2.4 Assessing Scale and Potential Logistical Needs

If a MAT is to be deployed, the TM uses the information provided by the PFAT to develop a checklist of the MAT's potential logistical needs and establish a schedule for meeting those needs. In general, the MAT's logistical needs and schedule will depend on the scale of the disaster associated with the MAT. As noted in Table 1, there are three basic disaster scales associated with the MAT process: minimal, standard and catastrophic.

In developing a checklist of logistical needs and establishing the schedule, the TS Contractor takes into account the effects of the disaster on the availability of local equipment and supplies and on the local infrastructure. The logistical needs of the MAT may include the following:

- communications equipment, including cell or satellite phones and pagers
- computer equipment, including laptop computers and printers
- specialty support such as GPS technology, mapping software
- rental cars, including vans and 4-wheel-drive vehicles
- work/meeting areas, including access to copiers, fax machines, and telephones
- aerial assets – helicopter or light plane
- accommodations – lodging and meals
- proper identification, such as FEMA badges and shirts
- digital and video cameras
- protective gear, such as hardhats and steel-toed boots
- bottled water
- flashlights, tape measures and other equipment for site assessments

The Pre-Deployment Information Package (Appendix A) answers questions frequently asked by potential MAT members regarding logistical needs.

FEMA will also consult with local officials regarding the availability and applicability of digital data for use in automated systems (e.g., GIS, CADD) if necessary. Custom applications of such data and systems can greatly enhance the efforts of the MAT and could prove useful in the preparation of the MAT report.

#### 4.2.5 Determining the Composition of the MAT

To fulfill its mission, a MAT must include members with the knowledge and skills necessary to identify the specific areas where the impacts on buildings should be assessed to determine the causes of both successful and failed performance of the buildings and make recommendations regarding construction methods and materials, building codes,

and local regulatory activities. These requirements largely define the typical composition of a MAT. The structure and organization of the team must be such that the team will work efficiently and effectively and that the necessary interaction takes place among FEMA HQ, the RO, the JFO, state and local governments, other Federal agencies, and private entities.

The TL, RO, JFO, and TM will discuss the composition of the MAT. If necessary, potential members will be added and deleted from the MAT. It is the responsibility of the TS Contractor to inform potential MAT members whether or not they will be deployed as part of the MAT and to answer any logistical questions. If additional expertise is needed, the TL and the TS contractor (usually the TM) will work together to find acceptable MAT members. The TS Contractor tells the MAT members when and where to meet once the meeting date has been determined.

The MAT includes not only those members who will conduct the field operations but also the support staff, who will ensure that the proper coordination takes place within FEMA and among all of the involved agencies. Usually, a standard MAT is composed of the following:

Field Operations: These are members of the MAT working in the field.

- Team Leader (TL) – a member of FEMA’s Mitigation Division who works on site and participates in the field inspections, who may also be the PO.
- Representatives of FEMA Headquarters with pertinent MAT skills.
- Local government representatives, at the option of the local government – officials such as an emergency management official, code or permitting official, floodplain administrator, municipal planner, or municipal engineer.
- State government representatives, at the option of the State – officials such as state representatives from emergency management, building codes, land use planning, or floodplain management.
- Team Manager (TM) – a lead technical person from the TS Contractor, who works on site and participates in the MAT’s field inspections.
- Building code expert – a representative of the TS Contractor’s technical consulting team, who has expertise in the State and local building codes enforced in the impacted area.
- Building envelope expert – a representative of the TS Contractor’s technical consulting team, who has expertise in wind vulnerability analysis and design of roofing, exterior sheathing, door and window systems to resist wind pressures and debris impact forces for residential buildings and critical facilities.
- Coastal engineer/Hydrologist – a representative of the TS Contractor’s technical consulting team, who has expertise in coastal or riverine processes and hazards.
- Data collection expert/Technical writer – a dedicated person provided by the TS Contractor responsible for working on field documentation, production of the

MAT daily log entries, and developing an outline of the MAT preliminary white paper (Section 6.2). In addition, this person assists the navigator with locating critical facilities and HMGP sites.

- Education and outreach expert – a representative of the TS Contractor’s technical consulting team, who has expertise in community education and outreach as well as marketing and risk management.
- Floodplain management specialist – a representative of the TS Contractor’s technical consulting team, who has expertise in the NFIP as well as the local Flood Insurance Rate Maps and applicable local management ordinances.
- Navigator/Data collection expert – a representative of the TS Contractor’s technical consulting team, who has expertise with GPS units and navigating to find critical facilities and HMGP sites. This person also assists the data collection expert with field documentation and MAT daily report production.
- Structural engineer – a representative of the TS Contractor’s technical consulting team, who has expertise in load path determinations, vulnerability analysis, and design of structural systems for residential buildings and critical facilities.

Support Staff: These are members who work offsite (either at the JFO or from their respective office locations) and support the MAT field team.

- Regional Office Representative (RO) – a member of FEMA’s Regional Office who acts as the JFO Liaison through which the TM works to gain access to sites and locate field work sites.
- FEMA media affairs liaison – a FEMA employee selected by the JFO Public Information Officer (PIO) to handle all media contacts and act as the liaison between the MAT, the Joint Information Center (JIC) staff in the JFO, and the media.
- Data coordinator – a dedicated person provided by the TS Contractor who helps the TL and TM coordinate efforts in the field and look for other reports so that the MAT doesn’t conflict with conclusions and recommendations. This person also manages the MAT website and screen media reports and e-mails that FEMA and other agencies send to the TS Contractor to use in the MAT process.
- Logistics coordinator – a dedicated person provided by the TS Contractor who coordinates with the TL and TM to find lodging and transportation arrangements for the field teams.
- GIS specialist – a representative of the TS Contractor’s technical consulting team, who has expertise in GIS systems and can prepare maps and other geo-referenced data for use in the field.
- HAZUS expert – a representative of the TS Contractor’s technical consulting team, who has expertise in the Hazards U.S. (HAZUS) software package and can assist with the MAT process. This person may also function as a GIS specialist.

In addition to the field operations and support staff listed above, the TS Contractor's technical consulting team may include other technical experts from other agencies, industry and academia, including structural engineers, hydrologists, building code specialists, environmental engineers, building scientists, technical writers, and support contractors who will work on site as needed and participate in the field inspections. Refer to Table 3 for a summary of MAT field operations staff (unshaded) and support staff (shaded) requirements and durations as a function of MAT disaster scale.

In some circumstances, the PO may also serve as TL. If the PO does serve as the TL, an alternate PO, who remains at FEMA Headquarters, will be designated by the PO, and the CO will be officially notified of that arrangement as soon as possible.

The complete process for the effective deployment and operation of a MAT is complex. Throughout all the phases and functions of a typical MAT process, extensive communication and coordination must occur among FEMA Headquarters, the ROs, the JFO, the TS Contractor and its technical experts and consultants, state and community officials, private professional organizations, and other Federal officials. As a result, FEMA and its support groups must be aware of the various lines of communication that are open during the MAT review process. FEMA identifies organizational planning and coordination requirements before activation of a MAT. These requirements will identify all the lines of communication that need to be maintained as well as the responsibilities of each of the entities involved in the MAT.

#### 4.2.6 Promoting Federal, State and Community Participation in the MAT Process

As emphasized in Section 4.1.4, FEMA's coordination with Federal, state, and local officials is essential to the success of the MAT. It is the responsibility of the PO and/or the TL to secure the participation of representatives from other Federal agencies. It is the responsibility of the RO Representative to work through the RO and JFO to secure the participation of state and community representatives. During the post-event stage, the TL will attempt to secure the participation of other Federal agency representatives, and the RO and JFO will attempt to secure the participation of state and local officials. Often after major disasters, some Federal agencies, states and communities are overwhelmed and find it difficult to participate in MATs during the field deployment phase. In these cases, the TM and TL will work with the RO and JFO to ensure that Federal, state and community representatives participate, at a minimum in the MAT report review process as described in Sections 6 and 7 of this document.

**Table 3. MAT Staff Requirements and Durations by MAT Disaster Scale**

MAT Member	Affiliation	Role	Required & Optional Staff per MAT Disaster Scale		
			Minimal	Standard	Catastrophic
Team Leader (TL)	FEMA	Field Operations	Required	Required	Required
FEMA Headquarters representative	FEMA	Field Operations	Not Required	Optional	Required
Other FEMA representative	FEMA	Field Operations	Not Required	Optional	Required
State government representative	State	Field Operations	Optional	Optional	Required
Local government representative	Local	Field Operations	Optional	Optional	Required
Team Manager (TM)	TS Contractor	Field Operations	Required	Required	Required
Building code expert	TS Contractor	Field Operations	Required	Required	Required
Building envelope expert (1)	TS Contractor	Field Operations	Optional	Required	Required
Building envelope expert (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Coastal engineer/Hydrologist (1)	TS Contractor	Field Operations	Required	Required	Required
Coastal engineer/Hydrologist (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Data collection expert/Tech writer (1)	TS Contractor	Field Operations	Optional	Required	Required
Data collection expert/Tech writer (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Education and outreach expert	TS Contractor	Field Operations	Required	Required	Required
Floodplain management specialist (1)	TS Contractor	Field Operations	Optional	Required	Required
Floodplain management specialist (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Navigator/Data collection expert (1)	TS Contractor	Field Operations	Optional	Required	Required
Navigator/Data collection expert (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Structural engineer (1)	TS Contractor	Field Operations	Required	Required	Required
Structural engineer (2)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Other technical expert (USACE)	TS Contractor	Field Operations	Not Required	Optional	Optional
Other technical expert (academia)	TS Contractor	Field Operations	Not Required	Optional	Required
Other technical expert (industry)	TS Contractor	Field Operations	Not Required	Not Required	Optional
Regional Office representative (RO)	FEMA	Support Staff	Required	Required	Required
FEMA media affairs liaison	FEMA	Support Staff	Required	Required	Required
Data coordinator	TS Contractor	Support Staff	Optional	Required	Required
Logistics coordinator	TS Contractor	Support Staff	Optional	Required	Required
GIS specialist (mapping)	TS Contractor	Support Staff	Not Required	Required	Required
HAZUS expert	TS Contractor	Support Staff	Not Required	Required	Required
Other technical expert (industry)	TS Contractor	Support Staff	Not Required	Not Required	Required
<b>Subtotal - Required Field Operations Staff</b>			<b>6</b>	<b>10</b>	<b>15</b>
<b>Subtotal - Optional Field Operations Staff</b>			<b>6</b>	<b>6</b>	<b>8</b>
<b>Subtotal Field Operations Staff - Required Staff + 1/2 Optional Staff</b>			<b>9</b>	<b>13</b>	<b>19</b>
<b>Subtotal - Required Support Staff</b>			<b>2</b>	<b>6</b>	<b>7</b>
<b>Subtotal - Optional Support Staff</b>			<b>2</b>	<b>0</b>	<b>0</b>
<b>Subtotal Support Staff - Required Staff + 1/2 Optional Staff</b>			<b>3</b>	<b>6</b>	<b>7</b>
<b>Total Staff - Subtotal Field Operations + Support Staff</b>			<b>12</b>	<b>19</b>	<b>26</b>
<b>Typical Duration in Field (days)</b>			<b>7</b>	<b>10</b>	<b>14</b>

#### 4.2.7 Assessing Hazards to MAT Members

In anticipation of the need to deploy a MAT, the PFAT members note during their field work any hazards that members of a MAT may encounter. Such hazards include buildings made unsafe by the damage incurred, contaminated sediments deposited by floodwaters, toxic chemicals released as a result of damage, and damage to the local infrastructure (e.g., roads, communications networks) that would make it unusually difficult to obtain emergency medical treatment if necessary. **Because access to medical supplies may be restricted, MAT members MUST bring adequate supplies of all required prescriptions and other medication.** Additionally, MAT members should be aware that travel to US Territories such as Puerto Rico and the Marianas Islands may be necessary. The Center for Disease Control and Prevention web site is used by the TS Contractor as a source for immunization information ([www.cdc.gov/travel](http://www.cdc.gov/travel)).

Other potential hazards could include security issues such as: restricted access to or curfews in areas where inspections are necessary and encounters with homeowners attempting to protect their properties. Information about these and other hazards will assist FEMA in its planning, development of operational guidance, and deployment of a MAT.

## **5. DEPLOYMENT AND FIELD OPERATIONS PHASE**

The deployment and field operations phase begins immediately after the decision is made by FEMA to deploy a MAT. As in the pre-deployment phase, several activities are carried out concurrently to ensure the effectiveness of the MAT process. These activities include developing logistical implementation schedules such as aerial assets for flyovers, defining field organizational assignments and responsibilities, establishing field coordination and reporting requirements, and identifying coordination activities required within the MAT.

### **5.1 Major Objectives of a MAT**

FEMA's goal in deploying a MAT is to obtain information that can be used to reduce damage to buildings in future disasters. The information collected by a MAT serves as the basis for conclusions regarding the failures or successes of buildings subjected to forces such as those from high winds, flooding, wave action and earth movements. These conclusions address building design, building materials and methods, construction workmanship, building codes, land use planning, hazard identification, and local inspection and regulatory activities. From conclusions concerning building failures and successes, FEMA formulates recommendations for needed improvements to building designs and construction materials, methods, and processes that may have application in areas broader than those affected by a specific disaster. For example, these recommendations would apply in areas where similar types of buildings may be subject to similar hazards. To provide the necessary technical information and develop sound recommendations, the MAT must be able to conduct its work in a rapid, thorough, and organized fashion and must clearly document its findings.

### **5.2 MAT Operations**

The following sections discuss the activation and deployment of a MAT, MAT field inspections, documentation, and reporting.

#### **5.2.1 Activation and Deployment**

If FEMA determines that deployment of a MAT is necessary, FEMA selects the TL, who initiates the deployment activities of the MAT. The TL, PO, RO representative, and the TM work together to carry out and coordinate all of the required activities for deploying the MAT. Such activities may include issuing written authorizations to proceed (issued by the CO), developing preliminary schedules of performance milestones, identifying travel and meeting requirements or restrictions, developing specific field operations guidance or requirements, and identifying logistical requirements.



Once the necessary activities are completed, the members of the MAT are deployed. Once notified, the MAT members should report to a FEMA- Joint Field Office or disaster area within two days of FEMA's decision to deploy. Once all MAT members are at the designated site, the TM will meet with the entire MAT and continue coordination activities with local officials and technical experts, and RO staff. Formal agreements among FEMA, the TS Contractor, the MAT members, or any other agencies should be used and modified as necessary to ensure the commitment of the selected team members. The TM is responsible for the overall activities of the team. Under the supervision of the TL, the TS Contractor is responsible for the following:

- managing the efforts of its consultants and local technical experts
- verifying previous determinations regarding necessary logistical and other support services including securing ground transportation
- identifying and coordinating with persons or firms who can supply those services
- investigating the availability of and obtaining, as appropriate, office space, as well as digital data and/or software for use by the MAT
- in a timely manner, ensuring the production of necessary interim products such as the MAT daily reports to be posted on FEMA's MAT web site

From the information gathered in the pre-deployment phase and reported in the PFAT checklist, the TL and TM will, with the assistance of the RO, JFO, and local MAT members, identify areas where the MAT field inspections are to be conducted; determine whether the team will operate as a single unit or break up into sub-teams; and develop an operations plan that identifies specific objectives, defines an inspection methodology, and establishes a schedule for accomplishing the necessary work. The TM then finalizes the plan for the team and when time permits, informs each team member of his or her role and responsibilities. Copies of the plan will be delivered to the TL, PO, the RO representative and the Mitigation Division Director or HPA Supervisor. Any revisions to the plan resulting from changes in field conditions must also be put in writing and copies submitted to the PO and the TL.

A Pre-Deployment Information Package (see Appendix A) with an accompanying Confidentiality Agreement (see Appendix C) is provided to MAT members as soon as they are approved to be on the MAT and the team is put on alert status. Those members who will be subcontractors to the TS Contractor usually receive their subcontractual agreements by e-mail. The package discusses a typical MAT scope and objectives and provides answers to some commonly asked questions. Once FEMA has authorized deployment of the MAT, subcontractors must sign the contract and Confidentiality Agreement. All other members of the MAT, except federal employees, must also sign the Confidentiality Agreement. In all cases, signed materials are to be returned to the TS Contractor promptly.

The use of sub-teams will be appropriate when the TL determines that doing so will enhance the efficiency and effectiveness of the MAT process. The following are examples of situations in which the use of sub-teams may be appropriate:

- for catastrophic disasters, when the number of required site visits is so great, and when the team is large enough, that separate teams can be efficiently and effectively formed and deployed to different areas
- when the types of building materials, methods, and/or damage are so varied, and when the depth of expertise included in the team is broad enough, that sub-teams can be formed according to expertise and deployed to sites with different conditions

### 5.2.2 Contacting Local Officials During Site Visits

During the field deployment phase, the MAT will try to access local officials in an attempt to better understand local conditions and issues. This is especially true in those situations where the RO and/or JFO have been successful in securing the assistance of community officials prior to the MAT arrival. In the event that the assistance of a community official cannot be obtained, at a minimum, the TM will ensure that the names of local officials are collected so that they may be contacted during the MAT report writing phase described in Sections 6 and 7.

### 5.2.3 Field Inspections

Throughout the MAT process, and especially during the field inspections, the need for a team approach is stressed. It is essential that the members of the MAT work together toward the goals identified in the field operations plan.

In general, the fieldwork performed by the members of the MAT consists of four major steps:

1. conducting field inspections
2. collecting data and documenting conditions
3. discussing observations, concerns, findings, conclusions and recommendations
4. reaching a consensus regarding the findings, conclusions and recommendations

### 5.2.4 Data Collection Standards and Documentation Requirements

In addition to conducting the necessary field inspections, the MAT collects data and documents its observations and reports the progress of its work to the PO and other authorized interested parties. Depending on the size and impact of the storm, the MAT may assist the state with data collection. When this occurs, the MAT may use a detailed data collection form provided by the state when conducting field inspections.

Data collection and documentation is required because FEMA must maintain a comprehensive record that justifies the conclusions and recommendations resulting from the MAT process. These conclusions and recommendations are eventually presented in both the Preliminary and Final MAT reports (see Sections 6 and 7).

In order to justify the conclusions and recommendations of the preliminary and final MAT reports, data collection and documentation must be carried in a manner that permits analysis and identification of trends within the buildings assessed by the MAT. This can be accomplished through the use of basic statistical sampling techniques outlined below. The purpose of these techniques is to ensure that the number of structures assessed by the MAT during field operations to provide a representative sample of actual conditions in the impacted area.

Determining the minimum number of structures (n) that need to be assessed for a representative statistical sample can be represented by the following formula

$$n = P(1-P) / [(Z^2 - E^2) + (1(1-P)/N)]$$

Where:

- **E** is the margin of error, sometimes known as level of precision or sampling error, represents the error caused by observing a sample instead of the entire whole population. Typical values range between 3% and 10%.
- **Z** is a factor used in statistics to express confidence level. The confidence Level represents the reliability of a sample estimate. Z factor values for typical confidence levels of 90%, 95% and 99% are 1.6449, 1.96 and 2.5758, respectively.
- **P** is the degree of variability; which represents the distribution of attributes in the population. The more variable a population, the larger the sample size required to obtain a given level of precision. The less variable (or skewed) a population, the smaller the sample size. The degree of variability is typically set at 50% (P = 0.5) to produce the most conservative results and/or when the variability is unknown.
- **N** is population size; which represents the total number of structures that can be potentially sampled.

Table 4 provide a summary of the minimum number of structures that would need to be assessed by the MAT for various population sizes based confidence levels of 90%, 95% and 99%. Based on experience with previous MATs, a review of Table 4 suggests that a 10% margin of error and a 90% confidence level would be reasonable target to expect from most MAT field efforts. A calculator for determining specific statistical sample sizes for MAT efforts is provided in Appendix E.

**Table 4. Summary of Minimum Number of Structures to be Assessed by the MAT for a Representative Statistical Sample**

Minimum Number of Structures Based on a 90% Confidence Level and a 50% Degree of Variability						
Population Size	Margin of Error					
	3%	4%	5%	6%	8%	10%
10	5	5	5	5	5	5
20	10	10	10	10	10	9
50	25	24	23	23	21	19
100	47	45	43	40	34	29
1,000	301	230	176	137	88	60
10,000	654	390	257	182	104	67
100,000	741	420	270	188	106	68
500,000	750	423	271	188	106	68
1,000,000	751	423	271	188	106	68
Minimum Number of Structures Based on a 95% Confidence Level and a 50% Degree of Variability						
Population Size	Margin of Error					
	3%	4%	5%	6%	8%	10%
10	5	5	5	5	5	5
20	10	10	10	10	10	10
50	25	25	24	23	22	20
100	48	47	45	43	38	33
1,000	341	273	218	174	116	81
10,000	880	536	357	254	146	95
100,000	1,045	594	382	266	150	96
500,000	1,063	599	384	267	150	97
1,000,000	1,065	600	384	267	151	97
Minimum Number of Structures Based on a 99% Confidence Level and a 50% Degree of Variability						
Population Size	Margin of Error					
	3%	4%	5%	6%	8%	10%
10	5	5	5	5	5	5
20	10	10	10	10	10	10
50	25	25	25	24	23	22
100	49	48	47	46	42	39
1,000	394	338	286	240	171	125
10,000	1,347	859	586	422	247	161
100,000	1,778	1,016	655	457	258	166
500,000	1,830	1,033	662	460	259	166
1,000,000	1,837	1,035	663	461	260	166

Many damaged buildings visited by the MAT will likely be repaired or replaced. Occasionally, repair and construction activities may be underway while the MAT is conducting field operations. Because structural conditions may change while the MAT is in the field, and because the team's observations are used as the basis for conclusions and recommendations for action by local government and the private sector, it is essential that the MAT adequately document all observations in writing. Data collection and documentation activities generally include data collection forms, compiling field notes, obtaining copies of local documents (e.g. building codes), and posting daily updates of the MAT daily logs, including photographs, on FEMA's MAT web site. In addition, it may also be appropriate to include video.

- **Data collection forms** – To ensure consistency in data collection from building to building, a standard data collection form may be used. Data collection forms can vary depending on the event and the type of damage of interest to the MAT investigation. Appendix E provides sample data collection form templates that may be used for MAT investigations of hurricane events and riverine flood events. Prior to the start of MAT field operations, the TL should coordinate with the TM to determine the type of data to be collected and the specific data collection forms to be used in the field. In the event the MAT provides assistance to the state with data collection, the MAT should use the data collection forms provided by the state.
- **Field notes** – Each team member shall record his or her notes in the field, as observations are made. Where necessary, the notes shall be supplemented by sketches. Portable tape recorders may also be used; if they are, the tapes should be transcribed at the end of each day or as soon as practicable. The TM shall document in writing the results of the team members' discussion of their observations, including any preliminary conclusions.
- **Photographs** – A photographic record of the team's observations is required. The team must keep a complete record of the dates on which photographs are taken, the subject of each photograph, and any other information necessary to establish the relationship between the photographs and field notes. An example of a photo log is provided in Appendix F.

Both standard 35mm cameras and digital cameras may be used.

- **35 mm Cameras** – Photographs to be presented in the final printed MAT report may be taken with traditional 35 mm film cameras rather than digital cameras. However, digital cameras are preferred due to the capability of ready transmission of digital images from the field (see below). When developing 35 mm film, it is recommended that 35 mm film be transferred directly onto a high-resolution digital photo CD as soon as possible for ease of use. If this is not possible, 35 mm film should be developed as slides rather than prints for maximum versatility.
- **Digital Cameras** – Newer digital cameras (5 megapixel or higher) may be used for photographs to be presented in the final printed MAT report. In many cases, digital cameras are preferable in MAT operations because they produce images of sufficient quality for on-screen display that can be viewed immediately, quickly uploaded to FEMA's MAT web site, and used for computer-based presentations (e.g., PowerPoint® slide shows). High capacity storage media also increase the potential utility of these systems. However, the images from digital cameras should always be taken using either a TIFF or JPEG format with the least amount of compression. Digital images need to be at least 900 x 1,500 pixels. This allows for a typical column width image of 266-300 ppi (pixels per inch) necessary for publication and reproduction. Whenever possible, it is recommended that images be downloaded at the end of each day and provided to the data collection expert along with a corresponding photo log.

- **Video** – Camcorders may be appropriate for documenting the team’s observations. However, although video is acceptable as a supplement to field notes and slides, it is not an acceptable replacement for them. Videotaping can be conducted only as approved by the TL through consultation with the TM and/or the Media Affairs Liaison.
- **Additional Information Requests** – In some cases, additional information may be required from sources not affiliated with the MAT. All MAT members requesting information from non-MAT sources must provide such requests in writing to the TL and the TM for review and approval prior to submittal. Specifically, the written request should include the type of information requested, the non-MAT source to be contacted, and the reason why the information is needed for the MAT.

### 5.2.5 Reporting Requirements

Follow data collection and documentation, the MAT reports the progress of its work to the PO and other authorized interested parties. Reporting is necessary because it is the TL’s responsibility to coordinate the activities of the MAT with other FEMA, Federal, state and local government operations and to ensure that adequate progress is being made toward meeting the goals of the MAT specifically and the Mitigation Division in general.

**MAT Daily Log** –The TM is responsible for working with the data collection expert and ensuring that the daily MAT log entry is electronically transmitted to FEMA in a timely manner. Once transmitted the TM will work with the Mitigation Division’s Web Site Coordinator to ensure that the daily log entry is posted to FEMA’s MAT web site (<http://www.fema.gov/rebuild/mat>) in a timely manner. Entries will begin upon the deployment of the MAT and continue until the MAT has completed its field assessment work and has been demobilized. A typical log entry will contain a description of the day’s observations accompanied with a “Map-n-GO” locator map and digital photographs of the site. A sample MAT daily log entry is provided in Appendix F.

In addition to the MAT daily log, the TM will provide a written report to the PO, PM, and RO representative, each week. The report will include the following information, at a minimum:

- a general description of the completed work
- an estimate, in percent, of the amount of work remaining to be completed by the team and an updated work schedule
- a description of special problems encountered, including the need for specialized technical support services not originally anticipated
- a summary of the team’s preliminary conclusions and recommendations
- a list of projected needs

### 5.2.6 Field Operations Close-out Meeting

After the field operations have been completed, but before the MAT members demobilize, the TM will arrange a meeting of all MAT members, usually in a conference setting. The TL and/or the TM lead the meeting. The data collection expert/technical writer, provided by the TS Contractor, takes notes during the meeting and, if appropriate, records the meeting on tape. The purpose of the meeting is to discuss the following:

- a draft outline for the preliminary white paper and JFO presentation (Section 6)
- preliminary conclusions and recommendations
- writing assignments for each MAT member
- coordination among the MAT members and the TS contractor regarding graphics for the report
- a schedule for reporting requirements for the MAT
- general expectations of MAT members over the next few months
- the appropriate technical team lead in each respective discipline (structural, hydrologic, critical facility, environmental, and technical writer) who shall be responsible for the accuracy of the content for each draft submission
- data formats of MAT notes, photos, and other documentation to ensure that all needs of the completed report have been addressed (review conducted by lead technical writer).

## **6. PRELIMINARY REPORTING AND OUTREACH**

After the MAT field operations process is completed, FEMA carries out preliminary reporting and outreach activities to evaluate the effectiveness and efficiency of the entire effort, to evaluate the implementation of the technical recommendations made by the MAT, and to monitor state and community responses to the information presented in the MAT report.

Preliminary reporting and outreach for the initial findings, conclusions, and recommendations of the MAT by the TS Contractor will consist of the following tasks and deliverables:

1. Development of a storyboard for the completed MAT report
2. Preliminary white paper
3. PowerPoint presentation at the JFO
4. Outreach activities and presentations

Details on these preliminary reporting tasks and deliverables are presented in Sections 6.1 through 6.4.

For standard scale disasters, the preliminary reporting and outreach tasks and deliverables will be completed using the following MAT field operations staff: (1) the Team Leader (TL), (2) State or local government representative, (3) the Team Manager (TM), (4) building code expert, (5) building envelope expert, (6) coastal engineer, (7) data collection expert/technical writer, (8) education and outreach expert, (9) floodplain management specialist/technical writer, (10) navigator/technical writer, and (11) structural engineer. Any additional field operations staff that do not remain on-site will work with the TL and the TM during the field operations close-out meeting to ensure that their photo logs and writing assignments are completed as needed. Refer to Table 5 for a summary of preliminary reporting and outreach staff requirements, durations, and deliverables as a function of MAT disaster scale.

### **6.1 Storyboard Development for the Completed MAT Report**

Upon completion of the field operations close-out meeting (Section 5.2.5), the TL, TM, and several members of the MAT field operations staff will remain on-site for an additional 1 to 2 days to storyboard the completed MAT report.

The process of storyboarding the completed MAT report should be conducted based on the following guidelines:

- Use the initial draft outline for the preliminary white paper as a starting point for the storyboarding process.



**Table 5. Preliminary Reporting and Outreach Staff Requirements, Durations, and Deliverables by MAT Disaster Scale**

MAT Member	Affiliation	Role	Required & Optional Staff per MAT Disaster Scale		
			Minimal	Standard	Catastrophic
Team Leader (TL)	FEMA	Prelim Reporting	Required	Required	Required
FEMA Headquarters representative	FEMA	Prelim Reporting	Not Required	Not Required	Optional
Other FEMA representative	FEMA	Prelim Reporting	Not Required	Not Required	Optional
State government representative	State	Prelim Reporting	Optional	Optional	Required
Local government representative	Local	Prelim Reporting	Optional	Optional	Optional
Team Manager (TM)	TS Contractor	Prelim Reporting	Required	Required	Required
Building code expert	TS Contractor	Prelim Reporting	Required	Required	Required
Building envelope expert (1)	TS Contractor	Prelim Reporting	Optional	Required	Required
Building envelope expert (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Coastal engineer/Hydrologist (1)	TS Contractor	Prelim Reporting	Required	Required	Required
Coastal engineer/Hydrologist (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Data collection expert/Tech writer (1)	TS Contractor	Prelim Reporting	Optional	Required	Required
Data collection expert/Tech writer (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Education and outreach expert	TS Contractor	Prelim Reporting	Required	Required	Required
Floodplain management specialist (1)	TS Contractor	Prelim Reporting	Optional	Required	Required
Floodplain management specialist (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Navigator/Data collection expert (1)	TS Contractor	Prelim Reporting	Optional	Required	Required
Navigator/Data collection expert (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Structural engineer (1)	TS Contractor	Prelim Reporting	Required	Required	Required
Structural engineer (2)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Other technical expert (USACE)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Other technical expert (academia)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
Other technical expert (industry)	TS Contractor	Prelim Reporting	Not Required	Not Required	Optional
<b>Subtotal - Required Preliminary Reporting Staff</b>			<b>6</b>	<b>10</b>	<b>11</b>
<b>Subtotal - Optional Preliminary Reporting Staff</b>			<b>6</b>	<b>2</b>	<b>12</b>
<b>Total Preliminary Reporting Staff - Required Staff + 1/2 Optional Staff</b>			<b>9</b>	<b>11</b>	<b>17</b>
<b>Typical Duration in Field to Prepare Deliverables (days)</b>			<b>2</b>	<b>3</b>	<b>5</b>
<b>Typical Size of Preliminary White Paper (pages, including appendices)</b>			<b>10</b>	<b>20</b>	<b>40</b>
<b>Typical Size of JFO Presentation (PowerPoint slides)</b>			<b>30</b>	<b>60</b>	<b>100</b>
<b>Typical Number of Outreach Presentations</b>			<b>8</b>	<b>15</b>	<b>30</b>

- Establish the key topics of the MAT report up front. Focus on the top two, three, or five topics depending on the scale of the disaster. Key topics typically include a review of building successes and failures in areas such as coastal flood hazards (i.e., coastal flooding, storm surge, breaking waves, floodborne debris, erosion, scour and corrosion); high wind hazards (i.e., high wind pressures, windborne debris, and wind-driven rain); critical facilities (i.e., police and fire stations, hospitals, schools, emergency operations centers and shelters); and community development (i.e., zoning, floodplain management ordinances, floodplain mapping, building codes, and standards). For catastrophic disasters, other key topics may be related to specific building types such as manufactured housing, or

hazards such as long-duration flooding impacts (i.e., solvent action, floodborne contaminants).

- Initiate storyboarding of the completed MAT report based on key topics, with an emphasis on development of findings, conclusions, and recommendations. These findings and recommendations typically concern: construction practices, including designs, methods, and materials; land use management practices; hazard identification; and local building code and other regulatory processes.
- Work to achieve consensus among the preliminary reporting staff members during the storyboard development.
- Once the storyboard for the completed MAT report is prepared, submit it for FEMA TL approval of storyboard, conclusions, and recommendations before any writing is initiated.
- Work with the TL to complete the storyboarding before leaving the field.
- Identify vulnerabilities/mitigation issues from key topics for Technical Recovery Advisories (Section 8).
- Revisit staff assignments (including writing, editing, quality assurance, and outreach), budget and schedule as the final part of the storyboarding effort. Get commitment from MAT members to ensure dedication of necessary resources.

## **6.2 Preliminary White Paper**

The first end product of the storyboarding process (Section 6.1) is for the TL, TM, and several members of the MAT field operations to develop a preliminary white paper that summarizes the initial findings, conclusions, and recommendations of the MAT. The TL, TM, and several members of the MAT field operations staff will remain on-site for an additional 1 to 2 days to prepare the preliminary white paper.

The preliminary white paper should be prepared based on discussions between the TL and TM and in accordance with the following process:

- The data collection expert/technical writer on the TS Contractor's staff works with the TL and the TM and reviews the initial draft outline for the preliminary white paper.
- The preliminary white paper staff work together to reach consensus and distill the initial key findings, conclusions, and recommendations from the storyboarding process into the white paper.
- The data collection expert/technical writer, TL, and TM designate MAT field operations staff to complete writing assignments for the applicable section(s) of the white paper.
- MAT field operations staff should obtain consensus from other MAT members before submittal of completed writing assignments.

- The completed writing assignments from the MAT field operations staff are submitted to the TL and TM for final content review and then given to the data collection expert/technical writer for final technical edit review, assembly, formatting, and submittal of the preliminary white paper.
- The standard preliminary white paper is a 90% document in MS Word approximately 20 pages in length (including appendices) with minimal graphics.

The preliminary white paper of the initial findings, conclusions, and recommendations of the MAT by the TS Contractor will be provided to FEMA within 7 days after the field operations close-out meeting. Once FEMA receives and approves the preliminary white paper in MS Word, it will be converted to PDF format.

The preliminary white paper is not printed by a GPO contractor; it is usually copied in-house by the TS Contractor or FEMA's Facilities Management and Services Division, Printing, Publications, and Graphics Section. In addition, the TS Contractor must provide the preliminary white paper in digital form (PDF format), so that it can be made available to the public through the FEMA MAT web site at <http://www.fema.gov/rebuild/mat>.

### **6.3 Joint Field Office (JFO) Presentation**

The second end product of the storyboarding process (Section 6.1) is for the TL, TM, and several members of the MAT field operations to prepare a PowerPoint presentation to be given at the FEMA Joint Field Office (JFO). The PowerPoint presentation will present the initial findings, conclusions, and recommendations of the MAT. The TL, TM, and several members of the MAT field operations staff will remain on-site for an additional day to prepare the JFO presentation.

The JFO presentation should be prepared based on discussions between the TL and TM and in accordance with the following guidelines:

- The data collection expert/technical writer on the TS Contractor's staff works with the TL and the TM and reviews the findings, conclusions, and recommendations of the preliminary white paper.
- The preliminary white paper staff work together to reach consensus and distill the initial key findings, conclusions, and recommendations from the storyboarding process into a presentation outline based on the preliminary white paper.
- The data collection expert/technical writer, TL, and TM designate MAT field operations staff to prepare PowerPoint visuals and bullets to fill in the applicable section(s) of the presentation outline.
- MAT field operations staff should obtain consensus from other MAT members before submittal of completed PowerPoint visuals and bullets.
- The PowerPoint visuals and bullets from the MAT field operations staff are submitted to the TL and TM for review and then given to the data collection expert/technical writer for final review, assembly, formatting, and submittal of the

JFO presentation.

- The standard JFO Presentation is a MS PowerPoint presentation approximately 60 slides in length with photos and available graphics embedded in the PowerPoint file.

#### **6.4 Outreach Activities and Presentations**

Based on the PowerPoint presentation given at the FEMA JFO (Section 6.3), the TS Contractor will use its MAT field operations staff to develop presentations and present them at various conferences, forums, meetings, work groups, contractors, etc., specifically on the MAT findings, conclusions, and recommendation of the technical teams. For standard scale disasters, the TS contractor will provide one or two MAT field operations staff to conduct outreach presentations at up to fifteen (15) conferences/forums/meetings. Refer to Table 4 for a summary of outreach presentation requirements and durations as a function of MAT disaster scale. These fifteen conferences/forums/meetings will be divided into two groups;

- The first group of conferences/forums/meetings (approximately 7 presentations) will be community education and outreach presentations that are intended for non-technical audiences (such as elected officials and the general public), and presented by the TS contractor's education and outreach expert
- The second group of conferences/forums/meetings (the remaining 8 presentations) will be outreach presentations that are intended for a more technical audience (such as local building and code officials and designers) and presented by the TS contractor's engineering staff.

In addition to the presentations by the TS Contractor listed above, the TS Contractor will provide the following technical support for FEMA's participation at the National Hurricane Conference or a similar conference – depending on the nature of the disaster:

- Finalize the preliminary white paper and JFO PowerPoint presentation developed in Sections 6.2 and 6.3,
- Prepare 500 hard copies of the finalized white paper and 500 CDs containing the finalized JFO PowerPoint presentation, along with any Technical Recovery Advisories (Section 8) for distribution at the conference.
- Send up to three (3) MAT field operations staff to give presentations and assist FEMA with staffing the MAT booth at the conference.

## 7. COMPLETED MAT REPORT

The primary deliverable of the MAT process is a Completed Report that presents the observations, conclusions, and recommendations of the MAT. Because the MAT process and goals are generally consistent from one deployment to the next, FEMA has established standards for the content, organization, and format of the report. These standards are intended to make the production of the report efficient and to provide an effective product. When FEMA determines that a different type of report will better meet these objectives, deviations from the established standards are acceptable.

Production of the report is a cooperative effort. Individual members of the MAT, FEMA staff, and representatives of the TS Contractor and its subcontractors are all expected to contribute to the report, initially and through the review process. The joint responsibilities of FEMA and the MAT in the report preparation process are primarily decision making and coordination. These responsibilities encompass the following tasks:

- identifying the report audience
- verifying and, as necessary, revising the standards for report content, organization, and format
- determining the types and number of photos and graphics to be used
- establishing the production schedules
- identifying points of contact for coordination
- identifying report reviewers, besides those on the MAT

Additional MAT responsibilities include providing information (text, photos and graphics) for inclusion in the report and reviewing draft reports. The specific responsibilities of the various parties are described in Sections 7.1 through 7.5, as are requirements and responsibilities concerning the archiving of materials associated with the MAT report and other aspects of the MAT process.

The completed MAT report will be prepared using a combination of MAT field operations and support staff as well as graphic artists to assist with production. Refer to Table 6 for a summary of completed MAT report staff requirements, durations, and deliverables as a function of MAT disaster scale.

The primary responsibility of the Team Manager (TM) is to coordinate the overall effort and ensure that the MAT report is a comprehensive report of all of the various technical activities that were conducted in the field following the disaster. The TM is the gatekeeper of information and the person who manages all writing assignments. A review committee of national experts and trade association representatives will be asked to review the comprehensive report to make sure that this event was fully covered and reported on from a technical standpoint and that sufficient coverage of the many potential topics was provided.

The Data Collection Expert/Technical Writer used by the MAT in the field (Section 4.2.3) will typically act as the lead technical writer for the MAT report. The Navigator /Data Collection Expert used by the MAT in the field (Section 4.2.3) will typically act as the technical writing reviewer for the MAT report.

**Table 6. Completed MAT Report Staff Requirements, Durations, and Deliverables by MAT Disaster Scale**

MAT Member	Affiliation	Role	Required & Optional Staff per MAT Disaster Scale		
			Minimal	Standard	Catastrophic
Team Leader (TL)	FEMA	Completed MAT	Required	Required	Required
FEMA Headquarters representative	FEMA	Completed MAT	Not Required	Not Required	Optional
Other FEMA representative	FEMA	Completed MAT	Not Required	Not Required	Optional
State government representative	State	Completed MAT	Optional	Optional	Required
Local government representative	Local	Completed MAT	Optional	Optional	Optional
Team Manager (TM)	TS Contractor	Completed MAT	Required	Required	Required
Building code expert	TS Contractor	Completed MAT	Required	Required	Required
Building envelope expert (1)	TS Contractor	Completed MAT	Optional	Required	Required
Building envelope expert (2)	TS Contractor	Completed MAT	Not Required	Not Required	Optional
Coastal engineer/Hydrologist (1)	TS Contractor	Completed MAT	Required	Required	Required
Coastal engineer/Hydrologist (2)	TS Contractor	Completed MAT	Not Required	Not Required	Optional
Data collection expert/Tech writer (1)	TS Contractor	Completed MAT	Optional	Required	Required
Data collection expert/Tech writer (2)	TS Contractor	Completed MAT	Not Required	Optional	Optional
Floodplain management specialist (1)	TS Contractor	Completed MAT	Optional	Required	Required
Floodplain management specialist (2)	TS Contractor	Completed MAT	Not Required	Not Required	Optional
Navigator/Data collection expert (1)	TS Contractor	Completed MAT	Optional	Required	Required
Navigator/Data collection expert (2)	TS Contractor	Completed MAT	Not Required	Not Required	Optional
Structural engineer (1)	TS Contractor	Completed MAT	Required	Required	Required
Structural engineer (2)	TS Contractor	Completed MAT	Not Required	Not Required	Optional
Other technical expert (USACE)	TS Contractor	Completed MAT	Not Required	Optional	Optional
Other technical expert (academia)	TS Contractor	Completed MAT (QA)	Not Required	Optional	Optional
Other technical expert (industry)	TS Contractor	Completed MAT (QA)	Not Required	Optional	Optional
Regional Office representative (RO)	FEMA	Completed MAT (QA)	Optional	Optional	Required
Data coordinator	TS Contractor	Completed MAT	Optional	Required	Required
GIS specialist (mapping)	TS Contractor	Completed MAT	Optional	Optional	Required
Graphic Artist	TS Contractor	Completed MAT	Optional	Required	Required
<b>Subtotal - Required Completed MAT Report Staff</b>			<b>5</b>	<b>11</b>	<b>14</b>
<b>Subtotal - Optional Completed MAT Report Staff</b>			<b>10</b>	<b>8</b>	<b>12</b>
<b>Total Completed MAT Report Staff - Required Staff + 1/2 Optional Staff</b>			<b>10</b>	<b>15</b>	<b>20</b>
<b>Typical Duration to Prepare Completed MAT Report (months)</b>			<b>6</b>	<b>8</b>	<b>12</b>
<b>Typical Size of Completed MAT Report (pages, including appendices)</b>			<b>100</b>	<b>200</b>	<b>500</b>
<b>MAT Summary Report Requirements</b>			<b>Not Required</b>	<b>Not Required</b>	<b>Optional</b>

## 7.1 Report Standards

The standards presented in the following sections are based on previously prepared MAT reports that have proved to be well suited to meeting FEMA's needs and on house style guidelines developed by the Department of Homeland Security.

### 7.1.1 Organization and Content

The body of a MAT report consists of text, photos and graphics. The major sections of the report and the order in which they appear are as follows:

- Executive Summary
- Introduction
- General Assessment/Characterization of Damages
- Field Observations
- Conclusions and Recommendations
- References
- Appendices

**Executive Summary** - The Executive Summary usually consists of one to three pages of text. Graphics usually are not included. The purpose of the Executive Summary is to provide a broad overview of the MAT's observations and conclusions and to list the most significant recommendations resulting from those observations. An introductory paragraph that provides background concerning the disaster and explains the role of the MAT is usually included.

**Introduction** - The introduction identifies the event that caused the disaster, briefly describes the disaster conditions, defines the MAT, explains the MAT's goals, states the purpose of the report, and introduces its contents. The Introduction may include graphics. Graphics used in the Introduction may include photographs of disaster conditions and illustrations such as maps of storm tracks and areas where the MAT conducted ground and aerial surveys.

**General Assessment/Characterization of Damages** - This section summarizes the general types of damage observed by the MAT (e.g., damage caused by flooding, high winds, or earthquake). Observed damage and mitigation successes are discussed in this section. More detailed descriptions of observed damage are included in the Field Observations Section.

**Field Observations** - This section explains how the MAT carried out its field inspections and describes the team's observations. Depending on the approach used by the MAT and the type and extent of the disaster, this section may be divided into subsections that address topics such as the categories of structures inspected (e.g., critical infrastructure,

residential, public or commercial); types of buildings inspected (e.g., wood-frame, masonry); structural systems observed (e.g., roofs, wall openings); the causes of damage (e.g., wind, flood, earthquake); and geographic areas in which the inspections were conducted. Specific conclusions based on the observations may also be included in this section.

**Conclusions and Recommendations** - The conclusions and recommendations presented in this section are based on the MAT's collaborative evaluation of observed building successes and damage. This section also presents technical guidance for mitigating damage from future events. Like the Field Observations section, the Conclusions and Recommendations section can be subdivided according to building category, type, structural system, causes of damage, and other categories. In some situations, it may be more appropriate to present conclusions and recommendations in separate sections.

### 7.1.2 Graphics

The following sections discuss the preparation and presentation of graphics presented in MAT reports. Graphics include photographs, tables, and illustrations.

#### 7.1.2.1 Photographs

MAT reports use photographs primarily to depict disaster conditions and the MAT's observations of building performance. Photographs in a MAT report may be annotated to highlight important features, or combined with illustrations to clarify descriptions of building performance. Most, if not all, of the photographs used in MAT reports are taken by team members to document observations in the field. As explained in Section 5.2.4, photographs may be taken with traditional film cameras or digital cameras. In addition, all photographs should be accompanied by a photo log indicating the name of the building (if applicable) and the precise location (at a minimum, the city and state). Refer to Appendix E for a sample photo log.

Usually, the TS Contractor is responsible for scanning prints and slides to convert them to digital form for use in the selected page layout program. Decisions regarding scanning resolutions and file formats for photographs are made by the TS Contractor according to the specific needs of each report. As a general rule, standard 4" x 6" prints that are to be reproduced at their actual size or smaller should be scanned at a resolution of at least 300 dpi. Slides that are to be reproduced at 4" x 6" or smaller should be scanned at a 100% size with resolution of at least 1,350 ppi (pixels per inch) and saved as a native Photoshop (PSD), TIFF, or EPS format. When images will be enlarged, it may be necessary to produce enlarged prints from the negatives to acquire the necessary resolutions.

Photographs taken with digital cameras may be used and, in many cases, are preferable to 35 mm photographs for their ease of viewing, transferring, and incorporation into electronic reports. However, images from digital cameras need to be using either a TIFF or JPEG format with the least amount of compression of at least 900 x 1,500 pixels. This allows for a typical column width image of 266-300 ppi necessary for publication and reproduction.



In some circumstances, FEMA may wish to incorporate photographs from other sources into MAT reports. Such sources may include other FEMA reports as well as documents prepared by other Federal agencies, professional organizations, and private parties; newspapers; magazines; and Internet web sites. The TS Contractor is responsible for contacting the originator of the photograph to request permission to reproduce the photograph (for non-Federal sources) and obtain a suitable original or digital file. The TS Contractor is also responsible for advising the TL regarding the quality and usability of such photographs. When photographs from other sources are used, the source must be cited in the report. In general, photographs taken by other Federal agencies may be freely reproduced in FEMA publications, provided the source is cited. However, images embedded in MS Word or MS PowerPoint files are not acceptable because they do not provide sufficient resolution for use in the completed MAT report.

#### 7.1.2.2 Illustrations

Illustrations in MAT reports usually demonstrate failure modes and recommended improvements for design and construction practices and materials. Like photographs, illustrations in MAT reports are usually reproduced in color. Illustrations are prepared by the TS Contractor and are often based on drawings made by the team members. In addition, illustrations in past MAT reports or other FEMA documents may be used as is or modified as necessary. When existing illustrations from other FEMA documents are used, the TS Contractor is responsible for coordinating with the TL to obtain and cite the source files. The TS Contractor is responsible for review of all illustrations to ensure that they are consistent with current FEMA guidance and/or best practices.

If FEMA wishes to use illustrations prepared by others, the responsibilities of the TS Contractor are the same as those listed in Section 7.1.2.1 for photographs from other sources and in 7.1.2.2.

#### 7.1.3 Completed Reports

Four reports are produced: a First Draft Report, a Final Draft Report, a Completed Report, and a Final GPO Version of the Completed Report. Details regarding each of these reports are provided in Section 7.1.3.1 through 7.1.3.4

Draft reports are prepared for distribution to the members of the MAT and other technical reviewers. The production schedule and number of draft reports required are outlined in the scope of services prepared by FEMA for each MAT task. The number of draft versions produced (see Sections 7.1.3.1 through 7.1.3.4) can vary according to the magnitude of the disaster, the number and sensitivity of technical and political issues involved, and other circumstances.

The primary goal of the draft production and review process is to establish the content of the report and ensure its accuracy. Decisions regarding final page layouts, and other issues that affect the appearance of the Completed, printed report are usually made later.

Consequently, the First Draft MAT report may be produced with a word processing program (e.g., MS Word) rather than the page layout program (e.g., INDESIGN) used for the completed product. After the report content, including graphics, is well established, any remaining drafts may be produced in a more final form.

A complete draft MAT report typically consists of the following:

- cover
- title page
- table of contents
- body of the report (text and graphics)
- appendixes (as necessary)

Specific format requirements are discussed in the following paragraphs.

**Cover** - The cover of the report usually consists of both text and graphics. The text includes the report title, including any subtitles; the spelled out name of FEMA; and a reference to any agencies that may have participated in the MAT's evaluations (for example, the International Conference of Building Officials, which assisted in the field investigations for the Oklahoma – Kansas May 3, 1999 Tornado MAT). Graphics are usually color photographs that illustrate the theme of the report. The TS Contractor selects graphics with the approval of the TM. Cover text and graphics must be in compliance with the Department of Homeland Security House Style Guidelines.

All draft versions of a MAT report are titled "Draft Report" and are labeled as such. These words appear as part of the report title. Labeling of draft versions of the report is essential. Because of the sensitive nature of the information presented in the report and the potential for misrepresentation of preliminary conclusions and other information by the media and the public, the TL may direct the TS Contractor to add "Draft" labels to other portions of the report (e.g., title page, individual report pages). After draft versions of the report are reviewed, changes to the title of the report and to the cover graphics may be necessary.

**Title Page** - The title page, which immediately follows the cover, contains the main title of the report, the spelled out name of FEMA, the date, and the DHS FEMA logo. Graphics may be included, as appropriate, on the title page.

**Table of Contents** - The table of contents lists all the sections and subsections in the report. It may also list tables and figures (i.e., graphics) that appear in the report and their corresponding page numbers. If appendixes are included in the report, they are listed at the end of the table of contents. The titles of all sections, subsections, and appendixes in the table of contents must be consistent with those in the body of the report. Titles that appear on tables and figures in the body of the report may occasionally be too long to be reproduced conveniently in the table of contents. In such circumstances, they may be condensed.

**Body of the Report** - All the major sections that compose the body of a MAT report including the Executive Summary, as discussed in Section 7.1.1, are identified with numerical designations. For example, the Executive Summary is Section 1, the Introduction is Section 2, and subsections, depending on their level, would be 2.1, 2.1.1, and so on. Each major section (e.g., Introduction) begins on a new, odd-numbered page to ensure all major sections start on a right facing page, and the section heading is centered at the top of the page. All subsection headings, regardless of their levels, are flush left. Each section of the report is paginated separately, with compound numbers that consist of the section number and the appropriate page number, separated by a hyphen.

In the printed Completed Report, figures are interspersed throughout the body of the report in such a way that they appear as near as possible to their citations in the text. Although this arrangement is convenient for the reader and results in a visually pleasing product, it entails a significant effort because of considerations regarding page length, paragraph breaks, and figure size. Because revisions affecting these factors will be made throughout the draft production and review process, this approach is not always practical for draft copies. When necessary, figures may be presented on separate pages that follow the page on which they are cited.

**Appendixes** - Appendixes provide information that is relevant to the MAT process but that would not be appropriate in the body of the report. Appendixes appear at the end of a MAT report. Appendixes should follow the formatting of the main report to provide a consistent look and feel. Information in appendixes should be verified to at least the standards of the main report.

#### 7.1.3.1 First Draft Report

Based on the storyboard (Section 6.1), the TS Contractor team will prepare a first draft report of the MAT findings, conclusions, and recommendations. The standard first draft report schedule is approximately 8 weeks as outlined below:

- The TM and/or the lead technical writer takes control of the writing process and builds the document over 4 weeks from the storyboard (Section 6.1) with input as needed from the technical experts, writers, editors, graphic artists, and other team members.
- The completed first draft is a 50% document in MS Word with hand sketches for graphics and photo references to a digital Photo File.
- A formal scheduled internal quality control (QC) review process is conducted over 4 weeks allowing sufficient time for technical writing review (2 weeks), internal technical review (1 week), and comment resolution/recovery (1 week).
- Participants in the internal QC review process should receive from the TM and/or the lead technical writer the following information before conducting a review: directions and QC forms, storyboard, QC comment or technical decision history (if any), and the current draft document.

- Each QC Reviewer must provide a summary of their comments on the QC review form and provide a red-lined document to the TM. Comments not being incorporated must be resolved jointly by the TM and QC Reviewer.

Upon completion of the first draft, the TM will submit the deliverables to the FEMA Team Leader (TL) for review by FEMA and other designated reviewers such as national experts, trade association representatives, and other agencies for review. The standard review schedule is approximately 4 weeks as outlined below:

- The TM will submit the storyboard along with the first draft to the TL and other designated reviewers for review.
- FEMA is to allow 2 weeks for review – comments that miss the submission deadline will not be considered.
- FEMA will have 1 week to compile a red-lined version of the document and a written summary of first draft comments for submittal to the TM.

Once the TM receives the first draft comment package from FEMA, the TM will have 1 week to work with the TL to obtain written concurrence on changes to be made.

#### 7.1.3.2 Final Draft Report

Based on the changes directed in FEMA's first draft comment package (Section 7.1.3.1), the TS Contractor will prepare a final draft report of the MAT findings, conclusions, and recommendations. The standard final draft schedule is approximately 7 weeks as outlined below:

- Convene the MAT via conference call or in person to revise the storyboard as necessary to respond to compiled FEMA review comments on the first draft report (Section 7.1.3.1).
- If necessary, revisit assignments (writing, editing, QC, etc.), budget, and schedule as the final part of the storyboarding effort. Get commitment from team members for dedication of resources and schedule obligations.
- The TM and/or the lead technical writer takes control of the writing process and revises the document from the first draft over 3 weeks, incorporating compiled FEMA review comments, revisions to the storyboard with input (as needed) from the technical experts, writers, editors, graphic artists, and other team members
- The completed final draft document is a 90% document in MS Word with graphics and photos either embedded in the Word file or referenced to separate graphic and photo files.
- A formal scheduled internal QC review process is conducted over 4 weeks allowing sufficient time for technical writing review (2 weeks), internal technical review (1 week), and comment resolution/recovery (1 week).
- Participants in the internal QC review process should receive from the TM and/or the lead technical writer the following information before conducting a review:

directions and QC forms, storyboard, QC comment or technical decision history (if any), and the current draft document.

- Each QC Reviewer must provide a summary of their comments on the QC review form and provide a red-lined document to the TM. Comments not being incorporated must be resolved jointly by the TM and QC Reviewer.

Upon completion of the final draft, the TM will submit the deliverables to the TL for review by FEMA and other designated reviewers, such as national experts, trade association representatives, and other agencies for review. The standard review schedule is approximately 4 weeks as outlined below:

- The TM will submit the storyboard along with the final draft to the TL and other designated reviewers for review.
- FEMA is to allow 2 weeks for review – comments that miss the submission deadline will not be considered.
- FEMA will have 1 week to compile a red-lined version of the document and a written summary of final draft comments for submittal to the TM.

Once the TM receives the final draft comment package from FEMA, the TM will have 1 week to work with the TL to obtain written concurrence on changes to be made.

#### 7.1.3.3 Completed Report

Based on the changes directed in FEMA's final draft comment package (Section 7.1.3.2), the TS Contractor will prepare a completed report of the MAT report findings, conclusions, and recommendations. The standard completed report schedule is approximately 4 weeks as outlined below:

- Convene the MAT via conference call or in person to respond to compiled FEMA review comments on the final draft.
- If necessary, revisit assignments (writing, editing, QC, etc.), budget, and schedule as the final part of the storyboarding effort. Get commitment from team members for dedication of resources and schedule obligations.
- The TM and/or the lead technical writer takes control of the writing process and revises the document from the final draft over 2 weeks, incorporating compiled FEMA review comments and revisions to the storyboard with input (as needed) from the technical experts, writers, editors, graphic artists, and other team members.
- The completed report document is a 100% document in MS Word approximately 200 pages in length with graphics and photos embedded in the Word file.
- A formal scheduled internal QC review process is conducted over 1½ weeks allowing sufficient time for technical writing review (½ week), internal technical review (½ week), and comment resolution/recovery (½ week).

- Participants in the internal QC review process should receive from the TM and/or the lead technical writer the following information before conducting a review: directions and QC forms, storyboard, QC comment or technical decision history (if any), and the current draft document.
- Each QC Reviewer must provide a summary of their comments on the QC review form and provide a red-lined document to the TM. Comments not being incorporated must be resolved jointly by the TM and QC Reviewer.
- Once all comments are resolved, the completed report document is compiled in INDESIGN and a final internal QC review conducted (½ week).

Upon completion of the completed INDESIGN report document, the TM will submit the deliverables to the TL for review by FEMA and other designated reviewers, such as national experts, trade association representatives, and other agencies for review. The standard review schedule is 2 weeks as outlined below:

- The TM will submit the storyboard along with the completed report to the TL and other designated reviewers for review.
- FEMA is to allow 1 week for review – comments that miss the submission deadline will not be considered.
- FEMA will have ½ week to compile a red-lined version of the document and a written summary of completed report comments for submittal to the TM.

Once the TM receives the completed report comment package from FEMA, the TM will have ½ week to work with the TL to obtain written concurrence on changes to be made.

#### 7.1.3.4 Final GPO Version of Completed Report

Based on the changes directed in FEMA’s completed report comment package (Section 7.1.3.3), the TS Contractor will prepare the final GPO version of the completed report. The standard final GPO report schedule is 2 weeks as outlined below:

- Convene the MAT via conference call to respond to compiled FEMA review comments on the completed report.
- If necessary, revisit assignments (writing, editing, QC, etc.), budget, and schedule.
- The TM and/or the lead technical writer works with the TL and the GPO production team to revise the completed report over 1 week, incorporating compiled FEMA review comments and producing the final GPO report package.

Once the package is complete, a final internal QC review is conducted by the TS Contractor for 1 week before submitting to FEMA and GPO.

A contractor selected by the Government Printing Office (GPO) prints the final GPO version of the completed report. The report is a 100% document prepared in INDESIGN and printed directly from digital files prepared by the TS Contractor. The files are submitted to the TM on disk (e.g., zip, CD) and are accompanied by two color copies of the report – one for the TL and one for GPO – that show how the printed report should

look. The TS Contractor is responsible for preparing the package of materials necessary for FEMA to forward to GPO. This includes a completed copy of the *GPO Desktop Publishing – Disk Information* form. FEMA’s Printing, Publications, and Graphics Section assigns FEMA publications number and date to be shown on the cover of the report.

## **7.2 Staff Requirements and Responsibilities**

The joint responsibilities of FEMA and the members of the MAT in the report preparation process are primarily decision making and coordination. These responsibilities are discussed in the following sections.

### **7.2.1 Identifying Report Audience**

The general audience of the MAT report includes construction contractors, architects, engineers, planners, and those local building officials who are involved in permitting, inspection, and development of building codes, as well as floodplain and land use management provisions. However, the specific intended audience of the MAT report is not necessarily the same for all MAT reports. The specific audience depends on the nature of the disaster, the depth to which local officials are involved in the MAT process, the types of recommendations presented in the report, and other circumstances specific to the disaster. Depending on the type of disaster, the primary intended audience might be community officials, building contractors and trades people, model code groups, or others. From the results of the field inspections and interaction with other groups, the TL will determine who the primary audience will be. For example, the MAT for Hurricane Georges in the Gulf Coast, focused on mitigation success stories. It is important that this determination be made as soon as possible because it affects the content of the report, including the types and amount of technical and policy information provided and the writing style.

In a catastrophic scale disaster, there may be the need for a summary MAT report based on the extent and types of damages initially observed. The base information for the summary report will be the same as the completed report; however, the content will vary depending on the intended audience. In a catastrophic event, there will be a substantial need for information from the MAT by decision makers. This will require a report that covers the general observations of the MAT and the conclusions and recommendations. Additionally, such events may require a more in-depth analysis targeting audiences such as engineers, architects, contractors, and local building and design professionals. For this audience, it may be necessary to provide a more scientific forensic analysis, often substantiated by calculations and detailed tracking of failure modes. Detailed discussions of material test methodologies or other issues will have to be covered to provide the scientific background on which to base the conclusions and recommendations. The use of these summary MAT reports will assist in disseminating the information needed to mitigate against future events. Providing a more detailed forensic style discussion will assist in efforts to enlist the expertise of design and construction professionals. Moreover, these additional reports will complement the general report with references to the detailed

study and will assist in targeting the decision makers who will often be instrumental in promulgating the regulations and legislation needed to mitigate future disasters.

### 7.2.2 Verifying and Revising Standard Report Content, Organization, and Format

As noted in Section 7.1, the standard report content, organization, and format presented in this manual may be revised as necessary to meet special needs. The results of the MAT process, coupled with community and other needs identified by the MAT and FEMA, determine whether the standard structure and format are adequate and, if not, to what extent they must be revised. Deviations from the established standards could include adding, deleting, or combining standard sections and increasing or decreasing the amount of information provided about specific topics.

### 7.2.3 Determining the Number and Type of Graphics to be Used

The number and types of graphics used in the MAT report depend on various factors, including the following:

- the extent of the disaster
- the types of damage observed
- the number, types and complexity of construction systems used in the disaster area
- the number and complexity of recommendations presented in the report
- the intended audience
- the availability of existing graphics products that can be used in the report

Because of the effort involved in producing illustrations, the production schedule may also be a factor. All decisions concerning graphics needs should be made by the MAT and approved by the TL as soon as possible so that adequate time is allowed for graphics production, including the necessary coordination with any graphic services contractors.

### 7.2.4 Establishing Production Schedule

The TM, in consultation with the PO, along with information and recommendations provided by the MAT, establishes the production schedule for the report. The schedule addresses not only the production of the completed report, but also all draft distribution and review activities carried out by the TS Contractor, the MAT, FEMA staff, local officials, RO and JFO staff, and any other parties involved in the MAT process. As noted in Table 5, the production schedule for the completed MAT report ranges from 6 months to 12 months, depending on the scale of the MAT.



### 7.2.5 Identifying Points of Contact

Usually, the points of contact for coordination among, FEMA, the MAT, and the TS Contractor are the PO, the TL, and the TM, respectively. Before report production begins, or as soon as possible during the production process, FEMA should either verify that these established points of contact are adequate or identify any additional or alternative points of contact required. For example, it might be necessary to allow for direct coordination between the TL and the TS Contractor's lead editor or between the PO and the TM.

### 7.2.6 Identifying Other MAT Report Reviewers

During the course of conducting field operations and upon return from the field, various interested parties, besides MAT members, typically express an interest in reviewing draft versions of the MAT Reports. The TS Contractor shall make all reasonable attempts to include persons that request permission to review the report in the review process. Often these persons have intimate knowledge of local conditions or represent groups or organizations with a vested interest in the observations, conclusions, and recommendations of the MAT. Comments from persons with local knowledge and/or interests can often add value to the content of the MAT Report. Before agreeing to allow anyone not on the MAT to review the report, the TM shall discuss and obtain the concurrence of the TL.

## **7.3 Additional MAT Responsibilities**

The additional responsibilities of the MAT in the report preparation process are primarily providing information (text and graphics) for inclusion in the report and reviewing draft reports. These responsibilities are discussed in the following sections.

### 7.3.1 Preparing Draft Report or Draft Report Sections

One or more members of the MAT field operation and support teams may prepare the entire draft report or sections of it. In some situations, the TL may wish to do some of the report writing. For those sections not prepared by the TL, the TM shall assign that responsibility to the appropriate team member(s). This decision is made at the final meeting of the MAT, while the team is still in the field. Once the draft text is written, the TL reviews it and makes the final decision on any unresolved questions or comments. The TS Contractor then uses the draft text and draft figures (Section 7.3.4) to prepare the draft report. The TL will monitor the progress on preparing the draft but it is the TM's responsible to ensure that the established production schedule is met.

### 7.3.2 Providing Graphics

The TL and other members of the MAT determine what illustrations, photographs, and other graphics should be included in the report.

**Illustrations** - The team members may design their own illustrations, provide existing illustrations that can be modified as necessary to meet the needs of the report, or provide existing illustrations that can be reproduced. Any illustrations used, regardless of source, should be reviewed to ensure they do not contain errors or inconsistencies.

**Photographs** - The source of photographs used in the report is usually photos taken by the members of the MAT during the field inspection as approved by the TM. If photographs or illustrations are used from non-MAT sources, specific written permission must be obtained from the owner of the photograph or illustration. Typically a photo release form is signed by both parties

**Other Graphics** - Examples of other graphics the team may wish to include in the report are FIRMs, community maps, charts and graphs, and maps produced with GIS.

For each graphic, the MAT must provide a caption and any special notes that must appear on or in conjunction with it. Also, the relationship of the graphic to the text must be clearly indicated so that citations can be incorporated into the text at the appropriate locations during the production of the typed draft.

### 7.3.3 Reviewing Draft Reports

After the TS Contractor finishes each draft version of the report, the members of the MAT, and any other selected reviewers, will receive copies for their evaluation. The team members must complete their reviews and return their comments according to the established production schedule to the TS Contractor. All comments must be submitted in writing, either in a memorandum or as annotations on the review copies. The TS Contractor reviews the comments and, if necessary, schedules a meeting with the TL to discuss the comments. The TL then compiles the comments in a red-lined version of the draft document and forwards them to the TM. While a particular section is being reviewed by the team members, the TS contractor may not make edits to, nor further develop, this section until all comments have been received.

Prior to each submission of a draft report or portion thereof, the technical lead in each discipline mentioned in Section 5.2.5 shall be the last contributor/reviewer entry on the chain of custody, thereby certifying that they have reviewed the material for accuracy and correctness.

## 7.4 Technical Support / Engineering Contractor Responsibilities

The TS Contractor prepares the draft and completed versions of the report, including text and graphics; incorporates revisions resulting from reviews by the TL, remainder of MAT, and other reviewers; and coordinates with the TM to ensure that all issues affecting production are resolved. These responsibilities are discussed in the following sections.

#### 7.4.1 Preparing Completed Report

After all necessary draft versions of the report have been prepared and all reviews completed, the TS Contractor prepares a final review copy of the Completed Report. The final review copy is a 100% document prepared in MS Word with graphics and photos embedded in the document. By this time, the PO usually has determined how the Completed Report will be reproduced, what methods will be used to prepare the materials submitted for printing, and whether the services of an outside vendor will be used. This determination is based on information provided by the TS Contractor and the Printing, Publications, and Graphic Section of the Facilities Management and Services Division.

Once the TL has approved the review copy or identified any final changes that need to be made, the TS Contractor will prepare the text and artwork for the Completed Report in INDESIGN. If the services of outside vendors are needed, the TS Contractor will coordinate with the vendors as necessary. The contractor submits the digital files (on CD ROM) for the Completed Report to the PO, who transmits them to the Printing, Publications, and Graphic Section, which coordinates the printing with GPO.

#### 7.4.2 Developing Presentation Materials

The TS Contractor shall develop a presentation that follows the completed MAT Report. The presentation shall be in a format acceptable to the TL. Currently MS PowerPoint is the preferred medium for this presentation. This presentation shall be completed within 14 days following delivery of the camera-ready materials for the completed MAT Report (Section 7.1.3.4).

#### 7.4.3 Preparing the Report for Inclusion in FEMA's Web Site

The TS Contractor shall provide to FEMA an electronic version of the Completed MAT Report in a format acceptable to FEMA's Office of Media Affairs. Currently, this is in the form of *Adobe Acrobat Reader* files (PDF) broken down in chapters and subsections that allow easy downloading. There shall be an accompanying text file compliant with requirements of Section 508 of the Rehabilitation Act.

#### 7.4.4 Archiving

Materials developed or used by the MAT and the TS Contractor during the MAT process include the following:

- daily reports or web site
- slides and photographs taken by the team members
- field notes recorded by the team members
- memorandums summarizing telephone conversations and meetings
- draft versions of the MAT report and Recovery Advisories (Section 8)

- reviewers' comments on draft versions of the report and comment responses
- supplementary information used in the report preparation, e.g., reports, illustrations, photographs, videos, other materials produced by private or public entities
- Chain of custody forms for each version of the report.

These materials provide vital documentation for the entire MAT process, especially the recommendations presented in the MAT report. Therefore, the TS Contractor must archive them for ready retrieval. After the completed MAT report has been issued, the TS Contractor, at the direction of the PO, will request that all members of the MAT submit any media or other materials they developed or obtained as part of their MAT responsibilities. The TS Contractor will then complete the following tasks:

- review all the materials, as well as all relevant in-house materials
- resolve any questions concerning missing or incomplete materials with the PO
- prepare a detailed inventory, organize the materials, and store them until such time that the PO directs the contractor to transmit the materials to another location, such as at the closeout of the contract

After the inventory is prepared, the TM shall provide a copy to the PO. The TM and the PO maintain the inventory so that they can respond quickly if FEMA receives requests for copies of, or inquiries concerning, stored materials.

## 8. TECHNICAL RECOVERY ADVISORIES

Another important deliverable associated with the MAT process is the preparation of Technical Recovery Advisories (RAs) that address major vulnerabilities encountered during the MAT and provide technical recommendations to assist property owners in the mitigation of these vulnerabilities as part of the rebuilding process.

### 8.1 Staff Requirements and Responsibilities

Based on vulnerabilities/mitigation issues identified during the storyboarding process (Section 6.1), and after completion of the preliminary white paper (Section 6.2) and discussion with the Technical Task Manager, the TS Contractor will assemble a separate production team to prepare the Technical Recovery Advisories (RAs). For standard scale disasters, the RA production team will prepare up to three (3) RAs using the following staff:

- Technical Team Lead – a lead technical person from the TS Contractor, preferably a member of the MAT field operations staff, who leads the development of the RAs. The Technical Team lead acts as a liaison between the RA production team and the other MAT members as needed to clarify issues and provide photos.
- Coastal engineer or Hydrologist/Reviewer – a representative of the TS Contractor’s technical consulting team, who has expertise in coastal or riverine processes and hazards, and provides development and quality review support for the RAs.
- Graphic Artist – a representative of the TS Contractor’s technical consulting team, who has expertise in preparing graphics for technical publications based on hand-drawn sketches and/or graphics prepared for other reference materials.
- Structural engineer/Reviewer – a representative of the TS Contractor’s technical consulting team, who has expertise in load path determinations, vulnerability analysis, and design of structural systems for residential buildings and critical facilities, and provides development and quality review support for the RAs.
- Technical writer/Data manager – a dedicated person provided by the TS Contractor who will assemble the RAs based on input provided from technical experts. This person would also be in charge of version control and place the interim and final RAs on the FEMA MAT website.
- Technical writing reviewer – a representative of TS Contractor’s technical consulting team, who will be responsible for the initial and final technical edit reviews of the RAs.

In addition to the staff listed above, one or more MAT members may be consulted to clarify items and provide photos to assist the Technical Recovery Advisory team. Refer

to Table 7 for a summary of RA production team staff requirements, durations, and deliverables as a function of MAT disaster scale.

**Table 7. Completed RA Production Team Staff Requirements, Durations, and Deliverables by MAT Disaster Scale**

MAT Member	Affiliation	Role	Required & Optional Staff per MAT Disaster Scale		
			Minimal	Standard	Catastrophic
Technical Team Lead	TS Contractor	RA Production Team	Required	Required	Required
Coastal engineer/Reviewer (1)	TS Contractor	RA Production Team	Optional	Required	Required
Coastal engineer/Reviewer (2)	TS Contractor	RA Production Team	Not Required	Not Required	Optional
Graphic Artist	TS Contractor	RA Production Team	Optional	Required	Required
Structural engineer/Reviewer (1)	TS Contractor	RA Production Team	Optional	Required	Required
Structural engineer/Reviewer (2)	TS Contractor	RA Production Team	Not Required	Not Required	Optional
Technical writer/Data manager (1)	TS Contractor	RA Production Team	Required	Required	Required
Technical writer/Data manager (2)	TS Contractor	RA Production Team	Not Required	Not Required	Optional
Technical writing reviewer (1)	TS Contractor	RA Production Team	Optional	Required	Required
Technical writing reviewer (2)	TS Contractor	RA Production Team	Not Required	Not Required	Optional
<b>Subtotal - Required RA Production Team Staff</b>			<b>2</b>	<b>6</b>	<b>6</b>
<b>Subtotal - Optional RA Production Team Staff</b>			<b>4</b>	<b>0</b>	<b>4</b>
<b>Total RA Production Team Staff - Required Staff + 1/2 Optional Staff</b>			<b>4</b>	<b>6</b>	<b>8</b>
<b>Typical Duration in Field to Prepare RAs (weeks)</b>			<b>8</b>	<b>11</b>	<b>14</b>
<b>Typical Number of Technical Recovery Advisories</b>			<b>1</b>	<b>3</b>	<b>5</b>

## 8.2 Production Schedule

The Technical Recovery Advisory team will work from their respective home offices for 60 to 90 days (to run concurrently with production of the completed MAT report). For a standard scale MAT, the production schedule for the RAs is 11 weeks as outlined below:

- The Technical Team Lead and Technical writer/data manager take control of the writing process and build the initial draft RAs over 2½ weeks with input as needed from the technical experts, writers, editors, graphic artists, and other team members.
- A formal internal QC review process of the initial draft RAs is conducted over 1½ weeks allowing sufficient time for technical writing review (½ week), internal technical review (½ week), and comment resolution/recovery (½ week).
- FEMA provides compiled review comments on the initial draft RAs in 1 week.
- The Technical Team Lead consults with FEMA to resolve comments on the initial draft RAs, then builds the final draft RAs over 1 week with input as needed from the technical experts, writers, editors, graphic artists, and other team members.
- A formal internal QC review process of the final draft RAs is conducted over 1 week allowing sufficient time for technical writing review (2 days), internal technical review (1½ days), and comment resolution/recovery (1½ days).

- FEMA provides compiled review comments on the final draft RAs in 1 week.
- The Technical Team Lead consults with FEMA to resolve comments on the final draft RAs, then prepares the final RAs over 1 week with input as needed from the technical experts, writers, editors, graphic artists, and other team members.
- A formal internal QC review process of the final RAs is conducted over 1 week allowing sufficient time for technical writing review (2 days), internal technical review (1½ days), and comment resolution/recovery (1½ days)
- Once the QC process is complete, the final RAs are converted from MS Word to PDF format (1 week) before submittal to FEMA.
- Once the final RAs in PDF format are accepted by FEMA, the Technical writer/data manager works with the FEMA TL and other FEMA staff to post the final RAs on FEMA's MAT website (<http://www.fema.gov/rebuild/mat>) and the public FEMA website (<http://www.fema.gov>).

## 9. MAT PROCESS FOR OTHER DISASTERS

As stated previously, FEMA typically deploys MATs in response to natural disasters such as floods and hurricanes; so the MAT process outlined in the SOP is geared towards these events. As indicated below, the MAT process for floods and hurricanes consists of five phases (refer to Units 5 through 8 for additional details):

1. Pre-Deployment Phase (Unit 4)
2. Deployment and Field Operations Phase (Unit 5)
3. Preliminary Reporting and Outreach (Unit 6)
4. Completed MAT Report (Unit 7)
5. Technical Recovery Advisories (Unit 8)

However, for other natural disasters such as earthquakes and tornadoes or human-caused disasters such as terrorism, the MAT process can vary because such events typically occur with little or no warning and can damage a wide range of buildings and infrastructure. This unit focuses on the key differences in the basic MAT process for non-hurricane disasters, including earthquakes, tornadoes and human-caused hazards; it is not intended to provide a comprehensive MAT SOP for earthquakes, tornadoes and human-caused hazards.

### 9.1 Earthquake MATs

The basic disaster scale used to assess the MAT for earthquakes is shown below in Table 8. A brief discussion of the key differences in the various phases of the MAT process for earthquakes is provided in the paragraphs that follow and summarized at the end of this section in Table 10.

**Table 8. MAT Disaster Scale for Earthquakes**

Scale of MAT Process	Typical Disaster Magnitude and Extent	Examples of Recent Disasters of this Scale
<b>Minimal</b>	Earthquake with Richter magnitude of less than 6.5 and/or Modified Mercalli Intensity of less than VIII	Napa - 1342-CA (2000)
<b>Standard</b>	Earthquake with Richter magnitude of 6.5 to 6.9 and/or Modified Mercalli Intensity of VIII to IX	Northridge - 1008-CA (1994), Nisqually - 1361-WA (2001)
<b>Catastrophic</b>	Earthquake with Richter magnitude of 7.0 and/or Modified Mercalli Intensity of X or greater	San Francisco Earthquake (1906), Alaska Earthquake (1964)

**Note:** The classification of an earthquake MAT scale as minimal, standard or catastrophic will depend on the depth and soil conditions at the location of the earthquake as well as its magnitude. For example, a 7.0 earthquake in Alaska may not be classified as catastrophic; while a 6.9 earthquake in Tennessee may not be classified as standard.



### 9.1.1 Pre-Deployment Phase

Since earthquakes occur with little or no warning, it is essential that coordination take place prior to the event, including formation of earthquake MATs that can be activated and deployed, depending on the nature, scale and requirements of the mission.

### 9.1.2 Composition of Earthquake MAT

Earthquake MAT field teams will bring together multiple disciplines, including building officials and inspectors, architects, engineers, code officials, planners, seismologists and geologists, and others who have expertise and experience in assessing the seismic response of buildings and lifelines to the forces of earthquakes. In addition, other experts such as social scientists may not be part of an earthquake MAT field team, but could prove useful to the overall process.

Table 9 identifies twelve categories of technical expertise that will be drawn upon in forming multidisciplinary teams to be deployed following a damaging earthquake.

### 9.1.3 Developing a Regional Technical Capacity

The earthquake MATs will be organized into two groups: California and Non-California. The goal is to develop a “regional technical capacity” in all seismic zones in the U.S. to ensure that personnel with knowledge of local building inventories, building practices, seismicity, seismic mitigation measures, and other issues that will influence decisions to activate an earthquake MAT, and priorities for evaluation.

Pre-event scenario-driven strategies may include the following:

- Identification of geographic areas with potential for ground shaking, ground deformation, and liquefaction.
- Recommendations for specific targets for post-event seismic evaluation
- Recommendations for qualified/available personnel to participate on the earthquake MATs
- Identification of datasets (soil, buildings, parcel, lifelines, mitigation projects) that are useful in characterizing the pre-event built environment.

### 9.1.4 Develop Pre-Event Inventory

The objective of this task is to develop methods for acquiring pre-event inventory data after an earthquake, or preferably before an earthquake in high seismic risk areas. Pre-event data on soils, buildings (including retrofit histories) and lifelines will facilitate the analysis of post-event seismic performance.

In the pre-event phase, tasks will include:

- Identify and prioritize building types to be surveyed, by seismic scenario
- Identify sources of reliable data on model building types (including HAZUS-MH):
  - [Wood Light Frame](#): **W1: W1A:**

**Table 9. Categories of Technical Expertise for Earthquake MAT**

Technical Expertise	Desirable Knowledge and Expertise
Seismic Design: General	<ul style="list-style-type: none"> <li>• Design and construction practices in study area</li> <li>• Performance of structures in previous events in the study area</li> <li>• Overarching understanding of building inventory in study area; research findings; role of mitigation in reducing losses</li> <li>• Improving seismic design and construction practices</li> </ul>
Seismic Design: Concrete	<ul style="list-style-type: none"> <li>• Field inspection of earthquake damage to concrete construction</li> <li>• Seismic response of concrete construction</li> <li>• Load path in concrete construction</li> <li>• Seismic rehabilitation of concrete construction</li> <li>• Familiarity with FEMA 306, FEMA 307, FEMA 308</li> </ul>
Seismic Design: Steel	<ul style="list-style-type: none"> <li>• Seismic response of steel construction; steel moment resisting connections</li> <li>• Field inspections of steel buildings</li> <li>• Inventory of steel buildings in study area and predicted performance in scenario events</li> <li>• Load path in steel construction</li> <li>• Rehabilitation measures for steel buildings</li> </ul>
Seismic Design: Wood	<ul style="list-style-type: none"> <li>• Seismic response of wood-frame construction</li> <li>• Shear wall strength and stiffness</li> <li>• Load path in wood-frame construction</li> <li>• Seismic rehabilitation of wood-frame construction</li> <li>• Improving seismic performance of wood-frame construction</li> <li>• Special considerations (e.g.. soft 1<sup>st</sup> stories)</li> </ul>
Seismic Design: Masonry/URM	<ul style="list-style-type: none"> <li>• Knowledge of URM construction practices and seismic rehabilitation measures</li> <li>• Seismic response of masonry/URM buildings</li> <li>• Load path in masonry/URM construction</li> <li>• Improving seismic performance of URM</li> </ul>
Non-Structural Seismic Design	<ul style="list-style-type: none"> <li>• Seismic performance of nonstructural building components; field observation of nonstructural damage from earthquakes</li> <li>• How earthquakes affect nonstructural components</li> <li>• Ability to detect proper anchorage of ceilings, interior walls and parapets.</li> <li>• Anchorage of claddings and equipment</li> <li>• Familiarity with HMGP, PDM, and other FEMA mitigation programs</li> </ul>
Seismic Codes/Code Admin	<ul style="list-style-type: none"> <li>• Knowledge of codes, code compliance and local ordinances for existing buildings in study area</li> <li>• Techniques for assessing losses avoided as a result of code compliance</li> </ul>
Geotechnical & Seismic	<ul style="list-style-type: none"> <li>• Knowledge of seismic hazards (fault rupture, ground shaking, soil liquefaction) and building performance</li> </ul>
Seismology	<ul style="list-style-type: none"> <li>• Expertise in seismology, soil types, relation to building damage</li> <li>• Expertise in seismology of study area (NMSZ, California, etc.)</li> </ul>
Existing Building: Seismic Strengthening	<ul style="list-style-type: none"> <li>• Knowledge of seismic response of buildings of all types</li> <li>• Knowledge of rehabilitation measures</li> </ul>
Land Use Planning/Seismic Risk Reduction Policy and Programs	<ul style="list-style-type: none"> <li>• Seismic risk reduction through land use planning</li> <li>• Microzonation and other tools</li> </ul>

- [Wood Frames, Commercial and Industrial: W2:](#)
- [Steel Moment Frames: S1: S1A:](#)
- [Steel Braced Frames: S2:](#)
- [Steel Light Frames: S3:](#)
- [Steel Frames with Concrete Shear Walls: S4:](#)
- [Steel Frame with Infill Masonry Shear Walls: S5: S5A:](#)
- [Concrete Moment Frames: C1:](#)
- [Concrete Shear Wall Buildings: C2: C2A:](#)
- [Concrete Frame with Infill Masonry Shear Walls: C3: C3A:](#)
- [Precast/Tilt-up Concrete Shear Wall Buildings: PC1: PC1A:](#)
- [Precast Concrete Frames: PC2: PC2A:](#)
- [Reinforced Masonry Bearing Wall Buildings with Flexible Diaphragms: RM1:](#)
- [Reinforced Masonry Bearing Wall Buildings with Stiff Diaphragms: RM2:](#)
- [Unreinforced Masonry Bearing Wall Buildings: URM: URMA](#)
- Develop procedures to acquire priority data in post-event environment. For example, the Rapid Observation of Vulnerability and Estimation of Risk (ROVER) is an open-source software application that employs the earthquake damage assessment methodology outlined in FEMA 154. In addition, an electronic tool is in the work based on ATC 20.
- Recognize the importance of teaming earthquake engineers supplied by the TS Contractor with experts who have specialized local knowledge of building stock and geological hazards.
- Coordinate with FEMA Mitigation Directorate to identify Pre-Disaster Mitigation (PDM), Hazard Mitigation Grant Program (HMGP), Section 406 Mitigation, and other FEMA or state supported mitigation projects that can be evaluated following a damaging earthquake. Identify potential study areas (California) for post-event analysis of mitigation benefits.

#### 9.1.5 Establish an Outreach Program

The key elements of an earthquake MAT will be incorporated into a focused outreach initiative that is developed in close coordination with FEMA. The intent of the outreach program is to expand awareness among key constituencies of the nature, goals, objectives, and focus of the earthquake MAT. Important elements of an outreach effort include:

- Earthquake MAT Overview
- Standardized MAT Pre-Deployment Package
- Coordination with FEMA Regions, States
- Coordination with EERI, earthquake engineering research and education centers, and Federal agencies under Circular 1242 (Plan to Coordinate NEHRP Post-Earthquake Investigations)

### 9.1.6 Review Existing Methodologies and Survey Tools for Buildings and Lifelines

The focus of this task is to review methodologies and survey tools that have been developed and used to evaluate buildings and lifelines in post-earthquake investigations. The technical leads from the earthquake MAT teams will provide input relative to methodologies and data collection tools that are best suited to meet the objectives of each data collection effort.

Since FEMA has not prepared BPAT or MAT reports for previous earthquake events, the following references may be used as to establish earthquake MAT data collection guidance and requirements for buildings and infrastructure:

- FEMA 547, *Techniques for Seismic Rehabilitation of Existing Buildings*. 2006 Edition, October 2006.
- FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook*. Second Edition, March 2002.
- FEMA Region 10, *Earthquake Hazard Mitigation Handbook for Public Facilities*, February 28, 2002.
- FEMA 352, *Post Earthquake Evaluation and Repair for Welded Moment Frame Buildings*, June 2000.
- FEMA 306, *Evaluation of Earthquake Damaged Concrete and Masonry Wall Buildings: Basic Procedures Manual*, January 1998.
- FEMA 307, *Evaluation of Earthquake Damaged Concrete and Masonry Wall Buildings: Technical Resources*, January 1998.
- FEMA 310, *Handbook for the Seismic Evaluation of Buildings. A Prestandard*, January 1998.
- FEMA 74, *Reducing Risk of Nonstructural Earthquake Damage: A Practical Guide*. Third Edition, September 1994.
- ASCE 41-06: *Seismic Rehabilitation of Existing Buildings*, 2007.
- ASCE 31-03: *Seismic Evaluation of Existing Buildings*, 2004.
- ATC 69, *Reducing the Risks of Nonstructural Earthquake Damage, State-of-the-Art and Practice Report*, February 29, 2008.
- ATC-20-1: *Field Manual: Postearthquake Safety Evaluation of Buildings, Second Edition*, 2005.
- ATC-14: *A Methodology for Seismic Evaluation of Existing Buildings*, 1987.
- EERI: *Learning from Earthquakes: A Brief Synopsis of Major Contributions*, September 2004.
- EERI: *The Nisqually Earthquake of February 28, 2001: Preliminary Reconnaissance Report*, March 2001.

- EERI: *Loma Prieta Earthquake, October 17, 1989: Preliminary Reconnaissance Report*, November 1989.
- USGS Circular 1242: *The Plan to Coordinate NEHRP Post-Earthquake Investigations*, Prepared in Coordination with the FEMA, the National Science Foundation, and NIST, 2003.

#### 9.1.7 Deployment and Field Operations Phase

Once FEMA decides to activate a MAT, many of the deployment and field operations activities described in Section 5.2 are essentially the same for earthquakes as they are for floods and hurricanes. The major differences relate to the composition of the MAT and the characteristics of the damage assessment data collected in the field. This is because earthquake damages have no relation to hurricane wind or flood damage.

#### 9.1.8 Preliminary Reporting and Outreach

Many of the preliminary reporting and outreach activities described in Sections 6.1 through 6.4 for floods and hurricanes are similar for earthquakes. However, there will be some important differences as to how the storyboards are developed (Section 6.1) and the preliminary white paper is prepared in the field (Section 6.2). For earthquakes, the mechanisms that caused the damage or collapse are often more complex and time-consuming to identify and analyze than for hurricane or flood events. For this reason, the preliminary reporting for earthquake events may need to be refined as additional data is obtained and processed.

#### 9.1.9 Completed MAT Report

Many of the completed MAT report standards, activities and responsibilities described in Sections 7.1 through 7.4 are essentially the same for earthquakes as they are for floods and hurricanes.

#### 9.1.10 Technical Recovery Advisories

Many of the technical recovery advisory activities and responsibilities described in Sections 8.1 through 8.2 for floods and hurricanes are similar for earthquakes. However, there will be some important differences as to when and how the technical recovery advisories are developed (Section 8.2). This is because the causes of earthquake damage are often more complex and time-consuming to identify and analyze than for hurricanes or floods.

**Table 10. Summary of Key Differences in the MAT Process for Earthquakes**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO EARTHQUAKE HAZARDS WITH COMMENTS	
Pre-Deployment Phase	Pre-Event Stage	Early Monitoring of Impending Storm/Flood Events	Limited: monitor earthquake activity through USGS
		Early Estimation of Potential Types and Severity of Damages	Direct: estimate damages using HAZUS-MH
		Early Coordination with FEMA	Limited: coordinate with the PO, TL, PM, TM and RO as early as possible
		Promoting Federal, State and Community Participation in MAT Process	Indirect: work with State/local universities (UCBerkeley, CSU), USGS, USACE, EQE, NIST, ALA
	Post-Assessment Stage and Assessment of Scale	Early Coordination with Technical Support/Engineering Contractor	Limited: coordinate TS/E contractor resources with earthquake experience as early as possible
		Immediate Post-Disaster Response Activities	Indirect: focus on search and rescue, restoration of critical services, protection against aftershocks
		HMTAP Rapid Response Tasks	May or may not be applicable
		Deploying a Preliminary Field Assessment Team	May or may not be applicable
		Assessing Scale and Potential Logistical Needs	Indirect: See Table 7 to assess scale and logistical needs
		Determining the Composition of the MAT	Indirect: include seismic structural engineers, geologists/geotechnical engineers, and earthquake code experts
		Promoting Federal, State and Community Participation in MAT Process	Indirect: work with State/local universities (UCBerkeley, CSU), USGS, USACE, EQE, NIST, ALA
		Assessing Hazards to MAT Members	Indirect: unsafe buildings, infrastructure damage, looting, earthquake aftershocks. Safety training of MAT members using Urban Search and Rescue Team experts is strongly recommended.
	Deployment and Field Operations Phase	Activation and Deployment	Indirect: same basic procedures apply once FEMA decides to activate a MAT
Field Inspections		Limited: field assessments to include assessments of infrastructure (roads, bridges, utilities) as well as buildings; refer to Section 9.2.1 for details	
Contacting Local Officials During Site Visits		Direct: try to access local officials such as the DOT or DPW to better understand local conditions and issues	
Documentation and Reporting		Indirect: same general requirements apply to data collection and reporting for buildings and infrastructure	
Field Operations Close-out Meeting		Direct: same basic procedures apply	
Preliminary Reporting and Outreach	Storyboard Development for the Completed MAT Report	Limited: storyboards will take more time to develop, and may address infrastructure (roads, bridges, utilities) as well as buildings	
	Preliminary White Paper	Limited: preliminary white paper assessments may be more general and subject to change as more data becomes available, and may address infrastructure (roads, bridges, utilities) as well as buildings	
	Joint Field Office (JFO) Presentation	Direct: same basic procedures apply	
	Outreach Activities and Presentations	Direct: same basic procedures apply	

**Table 10. Summary of Key Differences in the MAT Process for Earthquakes (continued)**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO EARTHQUAKE HAZARDS WITH COMMENTS
Completed MAT Report	First Draft Report	Direct: same basic standards, responsibilities and procedures apply
	Final Draft Report	Direct: same basic standards, responsibilities and procedures apply
	Completed Report	Direct: same basic standards, responsibilities and procedures apply
	Final GPO Version of Completed Report	Direct: same basic standards, responsibilities and procedures apply
	Develop Presentation Materials	Direct: same basic standards, responsibilities and procedures apply
	Prepare Report for Inclusion in FEMA's Website	Direct: same basic standards, responsibilities and procedures apply
	Archive Materials	Direct: same basic standards, responsibilities and procedures apply
RAs	Initial Draft Technical Recovery Advisories (RAs)	Limited: initial draft RAs will take more time to develop, and may address infrastructure (roads, bridges, utilities) as well as buildings
	Final Draft Technical Recovery Advisories (RAs)	Direct: same basic standards, responsibilities and procedures apply
	Posting of Final Technical Recovery Advisories FEMA's Website	Direct: same basic standards, responsibilities and procedures apply

## 9.2 Tornado MATs

The basic disaster scale used to assess the MAT for tornadoes is shown below in Table 11. A brief discussion of the key differences in the various phases of the MAT process for tornadoes is provided paragraphs that follow and summarized at the end of this section in Table 12.

**Table 11. MAT Disaster Scale for Tornadoes**

Scale of MAT Process	Typical Disaster Magnitude and Extent	Examples of Recent Disasters of this Scale
Minimal	Tornado outbreak including one EF3 or EF4 tornado and/or impacting only one state	DR-1432-WI (September 2002), DR-1444-OH (November 2002)
Standard	Tornado outbreak including one EF5 tornado and/or impacting two or more states	Midwest Tornadoes (May 1999), DR-1699-KS (May 2007)
Catastrophic	Tornado outbreak including two or more EF5 tornadoes and/or impacting two or more states	Tornado Super Outbreak (April 1974)

### 9.2.1 Pre-Deployment Phase

Since tornadoes occur with little warning, many of the coordination activities that occur in the pre-deployment phase (Sections 4.1 and 4.2) will have to be carried out as soon as possible after the event. In most cases, there will be no Preliminary Field Assessment Team (PFAT) deployment; however, an aerial assessment is still recommended for tornado MATs. This is because tornadoes can take down overhead utility lines, remove local landmarks and block roads which can hamper initial access to the area after the event.

### 9.2.2 Deployment and Field Operations Phase

Once FEMA decides to activate a MAT, most of the deployment and field operations activities described in Section 5.2 are essentially the same for tornadoes as they are for floods and hurricanes. The differences relate to the composition of the MAT and the characteristics of the damage assessment data collected in the field. For tornadoes, the concentration will be on high to extreme wind damage rather than a combination of wind and flood damage. Since FEMA has prepared BPAT reports and wind mitigation studies for previous tornado events, the following references may be used as to establish tornado MAT data collection guidance and requirements for buildings and infrastructure:

- FEMA 310, *Building Performance Assessment Report: Oklahoma and Kansas Midwest Tornadoes of May 3, 1999*, October 1999.
- FEMA 488, *Mitigation Assessment Team Report: Hurricane Charley in Florida*, April 2005.
- FEMA 320, Second Edition, *Taking Shelter from the Storm: Building a Safe Room Inside Your House*, March 2004.
- FEMA 361, First Edition, *Design and Construction Guidance for Community Shelters*, July 2000.
- FEMA Region V and Ohio Public Safety, *Bracing for the Future: Construction Techniques to Protect Against Future Wind Damage in Van Wert (FEMA-DR-1444-OH, November 2002 Tornadoes)*, January 2003.
- FEMA Region V and Illinois, *Windstorm Mitigation Manual for Light Frame Construction*, August 1997. (<http://www.saferoomillinois.org/building.php>)
- FEMA Region V and Illinois, *Companion Manual to the Windstorm Mitigation Manual for Light Frame Construction*, July 2000. (<http://www.saferoomillinois.org/building.php>)

### 9.2.3 Preliminary Reporting and Outreach

Most of the preliminary reporting and outreach activities described in Sections 6.1 through 6.4 are essentially the same for tornadoes as they are for floods and hurricanes. However, there will be some differences as to how the preliminary white paper is prepared in the field (Section 6.2). For tornadoes, the preliminary reporting is likely to



focus on infrastructure damage – particularly utilities – as well as building and critical facility damage.

#### 9.2.4 Completed MAT Report

Many of the completed MAT report standards, activities and responsibilities described in Sections 7.1 through 7.4 are essentially the same for tornadoes as they are for floods and hurricanes.

#### 9.2.5 Technical Recovery Advisories

Most of the technical recovery advisory activities and responsibilities described in Sections 8.1 through 8.2 are essentially the same for tornadoes as they are for floods and hurricanes. However, there will be some important differences as to what type of technical recovery advisories are developed (Section 8.2). This is because tornado recovery advisories may address infrastructure mitigation – particularly utilities – as well as building mitigation.

**Table 12. Summary of Key Differences in the MAT Process for Tornadoes**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO TORNADO HAZARDS WITH COMMENTS	
Pre-Deployment Phase	Pre-Event Stage	Early Monitoring of Impending Storm/Flood Events	Limited: monitor tornado activity through National Weather Service, Storm Prediction Center
		Early Estimation of Potential Types and Severity of Damages	Direct: Estimate damages using HAZUS-MH
		Early Coordination with FEMA	Limited: Coordinate with the PO, TL, PM, TM and RO as early as possible
		Promoting Federal, State and Community Participation in MAT Process	Indirect: work with State/local universities (TTU, Clemson), utility experts, ALA
	Post-Assessment Stage and Assessment of Scale	Early Coordination with Technical Support Contractor	Limited: coordinate TS contractor resources with tornado experience as early as possible
		Immediate Post-Disaster Response Activities	Indirect: focus on search and rescue, restoration of critical services, protection against subsequent storm events
		HMTAP Rapid Response Tasks	Limited: possible wind mitigation assessment tasks
		Deploying a Preliminary Field Assessment Team	Not Applicable: aerial assessment recommended
		Assessing Scale and Potential Logistical Needs	Indirect: See Table 9 to assess scale and logistical needs
		Determining Composition of the MAT	Indirect: include structural engineers and wind code experts
		Promoting Federal, State and Community Participation in MAT Process	Indirect: work with State/local universities (TTU, Clemson), utility experts, ALA
		Assessing Hazards to MAT Members	Direct: unsafe buildings, infrastructure damage, looting

**Table 12. Summary of Key Differences in the MAT Process for Tornadoes (continued)**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO TORNADO HAZARDS WITH COMMENTS
Deployment and Field Operations Phase	Activation and Deployment	Indirect: same basic procedures apply once FEMA decides to activate a MAT
	Field Inspections	Indirect: field assessments to include assessments of infrastructure (roads, bridges, utilities) as well as buildings; refer to Section 9.2.2 for details
	Contacting Local Officials During Site Visits	Direct: try to access local officials to better understand local conditions and issues
	Documentation and Reporting	Indirect: same general requirements apply to data collection and reporting for buildings and infrastructure
	Field Operations Close-out Meeting	Direct: same basic procedures apply
Preliminary Reporting and Outreach	Storyboard Development for the Completed MAT Report	Indirect: same basic procedures apply, except storyboards may address infrastructure (roads, bridges, utilities) as well as buildings
	Preliminary White Paper	Indirect: same basic procedures apply, except preliminary white paper may address infrastructure (roads, bridges, utilities) as well as buildings
	Joint Field Office (JFO) Presentation	Direct: same basic procedures apply
	Outreach Activities and Presentations	Direct: same basic procedures apply
Completed MAT Report	First Draft Report	Direct: same basic standards, responsibilities and procedures apply
	Final Draft Report	Direct: same basic standards, responsibilities and procedures apply
	Completed Report	Direct: same basic standards, responsibilities and procedures apply
	Final GPO Version of Completed Report	Direct: same basic standards, responsibilities and procedures apply
	Develop Presentation Materials	Direct: same basic standards, responsibilities and procedures apply
	Prepare Report for Inclusion in FEMA's Website	Direct: same basic standards, responsibilities and procedures apply
	Archive Materials	Direct: same basic standards, responsibilities and procedures apply
RAs	Initial Draft Technical Recovery Advisories (RAs)	Indirect: same basic procedures apply, except recovery advisories may address infrastructure (roads, bridges, utilities) as well as buildings
	Final Draft Technical Recovery Advisories (RAs)	Direct: same basic standards, responsibilities and procedures apply
	Posting of Final Technical Recovery Advisories FEMA's Website	Direct: same basic standards, responsibilities and procedures apply

### 9.3 Human-Caused Hazard MATs

The basic disaster scale used to assess the MAT for human-caused hazards such as terrorist attacks is shown below in Table 13. A brief discussion of the key differences in the various phases of the MAT process for human-caused hazards is provided paragraphs that follow and summarized at the end of this section in Table 14. Note that the primary purpose of this section is to focus on fire and explosion damage to buildings from terrorist bombings. Since FEMA typically deploys MATs when it believes that the conclusions drawn from field observations will support design, construction, and inspection recommendations of national significance; it is unlikely that a MAT would be deployed to investigate other human-caused hazards such as chemical, biological, radiological and nuclear attacks,

Note that under the National Construction Safety Team Act (2002), the National Institute of Building Sciences (NIST) is authorized to investigate major building failures. When this occurs, NIST may act as the lead agency for a human-caused hazard event, with FEMA providing technical and logistical support.

**Table 13. MAT Disaster Scale for Human-Caused Hazards**

Scale of MAT Process	Typical Disaster Magnitude and Extent	Examples of Recent Disasters of this Scale
Minimal	Terrorist attack on one facility and impacting one state	N/A
Standard	Terrorist attack on one or more facilities and impacting one state	Murrah Building, EM-3116-OK (April 1995)
Catastrophic	Terrorist attack on two or more major facilities and/or impacting two or more states	9-11 Attacks, DR-1391-NY and DR-1392-VA (September 2001)

#### 9.3.1 Pre-Deployment Phase

Since human-caused hazards such as terrorist attacks occur with little or no warning, many of the coordination activities that occur in the pre-deployment phase (Sections 4.1 and 4.2) will have to be carried out as soon as possible after the event. In most cases, there will be no Preliminary Field Assessment Team (PFAT) deployment; however, an aerial assessment is still recommended where permitted by the military or the Department of Homeland Security for human-caused hazard MATs. This is because human-caused hazards can lead to massive security sweeps which can hamper initial access to the area after the event.

#### 9.3.2 Deployment and Field Operations Phase

Once FEMA decides to activate a MAT, many of the deployment and field operations activities described in Section 5.2 are essentially the same for human-caused hazards as they are for floods and hurricanes. The major differences relate to the composition of the MAT and the characteristics of the damage assessment data collected in the field. This is

because human-caused hazard damages have no relation to hurricane wind or flood damage. Since FEMA has prepared BPAT/MAT reports for previous terrorist attacks, the following references may be used as to establish human-caused hazard MAT data collection guidance and requirements for buildings and infrastructure:

- FEMA 403, *World Trade Center Building Performance Study*, May 2002.
- FEMA 277, *Mitigation Assessment Team Report: Oklahoma City Bombing*, 1996.

### 9.3.3 Preliminary Reporting and Outreach

Many of the preliminary reporting and outreach activities described in Sections 6.1 through 6.4 for floods and hurricanes are similar for human-caused hazards. However, there will be some important differences as to how the storyboards are developed (Section 6.1) and the preliminary white paper is prepared in the field (Section 6.2). For human-caused hazards, the mechanisms that caused the damage or collapse are often more complex and time-consuming to identify and analyze than for hurricane or flood events. For this reason, the preliminary reporting for human-caused hazard events may need to be refined as additional data is obtained and processed.

### 9.3.4 Completed MAT Report

Many of the completed MAT report standards, activities and responsibilities described in Sections 7.1 through 7.4 for floods and hurricanes are similar for human-caused hazards. However, for human-caused hazards, there will be important differences as to how the completed MAT report information is reviewed, distributed and archived; because access to the MAT report data, conclusions and recommendation may need to be tightly controlled or even edited prior to public distribution for security reasons.

### 9.3.5 Technical Recovery Advisories

Many of the technical recovery advisory activities and responsibilities described in Sections 8.1 through 8.2 for floods and hurricanes are similar for human-caused hazards. However, there will be some important differences as to when and how the technical recovery advisories are developed (Section 8.2). This is because the causes of human-caused hazard damage are often more complex and time-consuming to identify and analyze than for hurricanes or floods. Also, internet access to the final recovery advisories may need to be tightly controlled or even edited prior to public distribution for security reasons.

**Table 14. Summary of Key Differences in the MAT Process for Human-Caused Hazards**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO HUMAN-CAUSED HAZARDS WITH COMMENTS	
Pre-Deployment Phase	Pre-Event Stage	Early Monitoring of Impending Storm/Flood Events	Limited: monitor terrorism activity through media reports
		Early Estimation of Potential Types and Severity of Damages	Limited: estimate damages based on credible local sources
		Early Coordination with FEMA	Limited: Coordinate with the PO, TL, PM, TM and RO as early as possible
		Promoting Federal, State and Community Participation in MAT Process	Limited: work with State/local universities, DHS, State Department, NIST, State/local law enforcement
	Post-Assessment Stage and Assessment of Scale	Early Coordination with Technical Support Contractor	Limited: coordinate with TS contractor resources with terrorism experience as early as possible
		Immediate Post-Disaster Response Activities	Indirect: focus on search and rescue, criminal investigation needs, increased security to guard against further attacks
		HMTAP Rapid Response Tasks	May or may not be applicable
		Deploying a Preliminary Field Assessment Team	Not Applicable: aerial assessment recommended where permitted
		Assessing Scale and Potential Logistical Needs	Indirect: See Table 11 to assess scale and logistical needs
		Determining the Composition of the MAT	Indirect: include subject matter experts, structural/mechanical engineers, blast engineers and building code experts.
		Promoting Federal, State and Community Participation in MAT Process	Limited: work with State/local universities, DHS, State Department, NIST, State/local law enforcement
		Assessing Hazards to MAT Members	Indirect: unsafe buildings, infrastructure damage, looting, additional attacks
	Deployment and Field Operations Phase	Activation and Deployment	Indirect: same basic procedures apply once FEMA decides to activate a MAT
		Field Inspections	Limited: field assessments to include assessments of infrastructure (roads, bridges, utilities) as well as buildings; refer to Section 9.3.2 for details
Contacting Local Officials During Site Visits		Direct: try to access local officials to better understand local conditions and issues	
Documentation and Reporting		Indirect: same general requirements apply to data collection and reporting for buildings and infrastructure	
Field Operations Close-out Meeting		Direct: same basic procedures apply	
Preliminary Reporting and Outreach	Storyboard Development for the Completed MAT Report	Limited: storyboards will take more time to develop, and may address infrastructure (roads, bridges, utilities) as well as buildings	
	Preliminary White Paper	Limited: preliminary white paper assessments may be more general and subject as more data becomes available, and may address infrastructure (roads, bridges, utilities) as well as buildings	
	Joint Field Office (JFO) Presentation	Direct: same basic procedures apply	
	Outreach Activities and Presentations	Direct: same basic procedures apply	

**Table 14. Summary of Key Differences in the MAT Process for Human-Caused Hazards (continued)**

MAT PHASE, STAGE AND TASK (Floods/Hurricanes)		APPLICATION TO HUMAN-CAUSED HAZARDS WITH COMMENTS
Completed MAT Report	First Draft Report	Limited: access to data and conclusions may need to be tightly controlled during first draft report review
	Final Draft Report	Limited: access to data and conclusions may need to be tightly controlled during final draft report review
	Completed Report	Limited: access to completed MAT report data and conclusions may need to be tightly controlled or edited
	Final GPO Version of Completed Report	Limited: completed MAT report may need to be edited or access restricted
	Develop Presentation Materials	Limited: access to completed MAT report presentation materials may need to be restricted
	Prepare Report for Inclusion in FEMA's Website	Limited: internet access to completed MAT report may need to be restricted
	Archive Materials	Limited: outside access to archive materials may need to be restricted or prohibited
RAs	Initial Draft Technical Recovery Advisories (RAs)	Limited: initial draft RAs will take more time to develop, and may address infrastructure (roads, bridges, utilities) as well as buildings
	Final Draft Technical Recovery Advisories (RAs)	Limited: access to completed final draft RAs may need to be restricted
	Posting of Final Technical Recovery Advisories FEMA's Website	Limited: internet access to final RAs may need to be restricted

# **APPENDIX A**

## **MAT Pre-Deployment Information Package**

September 29, 2008

Dear Potential MAT Member:

In response to hurricanes, earthquakes, and other disasters, the Federal Emergency Management Agency (FEMA) often deploys Mitigation Assessment Teams (MATs) to conduct field investigations at disaster sites. MATs are composed of both government and private sector, nationally recognized experts in various building science and hazard-related fields. The Technical Support (TS) Contractor manages the MAT program, under contract to FEMA. Private sector consultants, who serve on MATs, work as subcontractors to the TS Contractor.

The mission of the MAT program is to study post-disaster building performance and to document failures and successes in an effort to promote damage reduction. To accomplish this mission, the MAT program uses the combined resources of a Federal, state, local and private sector partnership. To learn more about the MAT's purpose and goals, refer to FEMA's MAT web page at [www.fema.gov/rebuild/mat](http://www.fema.gov/rebuild/mat).

The ability to quickly form and deploy MATs is essential to the success of the MAT program. Therefore, to increase the efficiency of the MAT process, particularly the procurement of expert services and the deployment of MATs to the field, FEMA has developed this standardized MAT Pre-Deployment Package to address some commonly asked questions. This package is intended for subcontractors, subconsultants, MAT roster members, and other potential members of MATs such as Federal employees "mission-assigned" to the MAT by FEMA.

September 29, 2008



## **Frequently Asked Questions and Answers**

### **Who is part of the MAT?**

FEMA MATs usually include the following types of members:

- representatives of FEMA Headquarters and of FEMA Regional Offices
- State and local officials
- public- and private-sector experts in technical disciplines such as structural and civil engineering, architecture, building construction, natural hazard research, building code and land use measures development and enforcement, and technical writing

### **When will I know whether FEMA is going to form and deploy a MAT?**

When an Incident of National Significance occurs, FEMA's Project Officer instructs the TS Contractor to begin forming a MAT. The TS Contractor then queries the existing MAT database, a list of experts who are interested and eligible MAT members. If you are chosen, the TS Contractor will contact you to determine your availability for participating as a member of the MAT. Next, the TS Contractor will submit your name and resume to FEMA for approval. A MAT is then formed, and the entire team is put on standby. About 2 to 3 days after the disaster has occurred (e.g., after landfall of a hurricane), FEMA deploys a Preliminary Field Assessment Team (PFAT) to determine whether the deployment of a full MAT is appropriate. The PFAT quickly assesses the damage in affected areas and determines whether the MAT should be deployed. FEMA then informs the TS Contractor whether a MAT will be deployed. If a team is deployed, the schedule is revised as necessary to account for any changes to the composition of the team. The TS Contractor then begins organizing the logistics of deploying the team. The TS Contractor will call all of the MAT members, authorizing them to travel to a specified destination at a designated time. The MAT meets the next day for a briefing and to make a field schedule.

**When should I book my airline ticket? Who pays for it? How am I reimbursed for hotel, meals, etc.?**

In most cases, not all members of the MAT are being reimbursed for travel expenses. Always coordinate with the TS Contractor to determine whether your travel expenses are reimbursable. Once you are authorized to travel, you are responsible for making your own airline reservations and paying for your tickets. In addition, although the TS Contractor will make lodging arrangements, you are responsible for paying your own hotel bill. You will be reimbursed for your travel expenses in accordance with Federal government travel regulations and the terms of the TS Contract. Standard government per diem varies by state and city. Currently, the minimum per diem rate for meals is approximately \$39 per day. However, the minimum per diem rate for lodging will vary greatly by location. Check the web site:

[http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA\\_BASIC&contentId=17943](http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BASIC&contentId=17943) for more information. MAT members who subcontract through the TS Contractor should submit their travel expenses on their regular invoices to the TS Contractor for reimbursement.

**What rate will FEMA pay subcontractors?**

For those who will be subcontractors to the TS Contractor, a rate is negotiated with the TS Contractor prior to field deployment. Estimating the exact rate is difficult. Rates are approximately equal to those paid by the government for private work.

**Do I need a rental car?**

Unless otherwise directed by the TS Contractor, the TS Contractor arranges for transportation in the field. If you are traveling on a reimbursable basis, do not rent a car unless specifically authorized by the TS Contractor.

**What type of equipment should I take?**

You are responsible for providing any necessary equipment such as a cell phone, pager, laptop computer, printer, GPS, and digital camera. The TS Contractor will take the photographs to be included in the MAT report. If you want your photographs included in

the report, you must coordinate with the TS Contractor. Slides or prints from a conventional film camera are preferred over photographs from a digital camera because they produce a higher-quality image. (see MAT Personal Checklist)

### **What clothing should I bring?**

Bring proper field attire for the climate in which the MAT will be working. Jeans and t-shirts are appropriate. It is a good idea to bring enough clothes for at least 1 week. If necessary, you can usually visit a laundromat. OSHA-approved steel toe / steel shank boots are recommended. In preparing for deployment, the cost of obtaining personal items (including personal safety equipment) is the sole responsibility of the MAT members. No costs associated with obtaining items for deployment shall be reimbursed without the expressed prior authorization of the TS Contractor. (see MAT Personal Checklist)

### **What safety issues should I be concerned with?**

The TS Contractor will provide hard hats for the team. People with allergies may have problems and should consult their doctor before traveling with the MAT. Make sure that you bring adequate amounts of any prescription medications. It is recommended that you bring bug repellent. Check the Center for Disease Control and Prevention web site for immunization information. Sometimes MATs travel to areas that are U.S. possessions and territories such as Puerto Rico and Micronesia, where tropical diseases may be present. MAT members may also be required to follow Health and Safety Plan procedures established by TS Contractor and/or FEMA.

### **Is the fieldwork physically demanding?**

MAT fieldwork can be quite physically demanding for several reasons. Since tropical cyclones often make landfall in tropical and subtropical environs, fieldwork often occurs in areas of extreme exposure to the sun along with high temperatures and humidity. Additionally there are situations where the MAT must be housed in facilities that have temporarily lost their ability to produce air-conditioning. Vehicular access into damaged areas is often restricted by damage to transportation infrastructure and debris which often

results in having to walk considerable distances over debris covered, uneven, and unstable terrain. These factors, in combination with long work hours, often result in MAT deployments being physical demanding.

**Are accommodations made for MAT members with disabilities?**

FEMA and the TS Contractor will make all reasonable accommodations for MAT members with disabilities. The ability to make such accommodations during field operations is often severely restricted because of the chaotic nature of disaster sites which is not within the control of FEMA nor the TS Contractor. MAT members, who are disabled and require special accommodations, should bring such requirements to the attention of FEMA and the TS Contractor as soon as possible. FEMA and the TS Contractor will evaluate these special needs and will make all reasonable efforts to ensure that the person in question can safely and productively participate in the MAT.

**Once I am selected to be a MAT member, what can I do to prepare?**

If possible, familiarize yourself with the local building and land use codes in use in the area where the MAT will be working. For floods, look to the National Flood Insurance Program (NFIP) regulations and practices, flood maps are available to view at the Map Service Center at: [www.FEMA.gov](http://www.FEMA.gov), in addition to building codes and standards.

**What can I do to better understand FEMA's mitigation programs?**

FEMA's web site contains a wealth of information on FEMA's mitigation programs (see <http://www.fema.gov/plan/prevent>). This includes the MAT web site at <http://www.fema.gov/rebuild/mat>. Another way to gain further knowledge about FEMA's mitigation program, is to obtain training on natural hazard mitigation. The Emergency Management Institute (EMI), located in Emmitsburg, MD offers other on-site and independent study courses on mitigation and emergency management. (See <http://www.training.fema.gov/>)

**What are other sources of information?**

The MAT web site [www.fema.gov/rebuild/mat](http://www.fema.gov/rebuild/mat) is an excellent source of information. In

addition, you can review other MAT reports. Also, research the website of BESTT, the current TS Contractor at ([http://www.g-and-o.com/fema/fema\\_main.asp](http://www.g-and-o.com/fema/fema_main.asp)). This site will also have information that is useful to potential MAT members.

**What is expected of me in the field? What will we be looking at in the field?**

In most cases, you will not be collecting detailed damage data, but you will be making general observations about structural damages in order to develop recommendations. Usually, you will be provided with a list of items to investigate in the field developed by the team.

**Who is in charge of field operations?**

FEMA's MAT Team Manager (TM) has the overall responsibility for the MAT, including field operations. However, the TS Contractor is in charge of all the logistics associated with the MAT, including the production of reports and other MAT products and assigning work to subcontractors.

**How long are the workdays in the field? Will I be working weekends? How long will the field work last?**

MAT members work long hours in the field for a period of approximately 1 to 3 weeks. Typically, MATs will work through weekends and holidays. This work requires dedication. Since the availability of housing is often limited in disaster areas, the MAT is often required to find housing well away from the disaster site which then requires considerable travel time just to travel to and from the disaster site each day. It is important to realize that it may be difficult to communicate with your office or family while working on a MAT. Cell phone service is often interrupted. For this reason, MAT members should not expect to have the time or facilities to conduct work, other than that directly associated with the MAT, while deployed in the field.

**What methods are used to conduct field assessments?**

Field assessments are conducted by air, ground transportation, and by foot. Aerial assessments are often conducted using an UH-60 Blackhawk helicopter or light plane.

Ground transportation may be by car, van, 4 wheel drive vehicle, or Humvee.

**Who do I see if there are logistical problems?**

The TS Contractor Team Manager will address any logistical problems that arise in the field.

**What is expected of me after we leave the field?**

After the fieldwork is completed, a meeting is held to begin work on the draft MAT report. Under the direction of FEMA's Project Officer (PO) and the TS Contractor's TM, an outline is developed, writing assignments are made, and a schedule is developed for the draft MAT report. Observations, findings, and preliminary conclusions are generated for the report after the team has left the field. The report writing/revision process lasts for another 3 to 11 months.

## **Personal MAT Deployment Checklist**

### **Clothes**

- A 7-day supply of clothes (dress for the climate where the MAT is deployed)

### **Medications**

- A minimum 10 day supply of all prescription drugs and necessary medications

### **Safety and Protective Equipment**

- OSHA-approved steel toe/steel shank boots
- Protective Eye Wear
- Sun Glasses
- Breathing Mask (if sensitive to dust or other fine particulates)

### **Personal Care Items**

- 10 day supply of toiletries
- Suntan lotion
- Backup eye glasses (in case eye glasses are broken or lost)

### **Working Materials**

- Cell phone (service may be intermittent)
- Pager/Wireless e-mail device (service may be intermittent)
- Laptop computer
- Portable printer with supply of paper
- Storage media for digital cameras and laptops
- GPS unit
- Digital camera (2 megapixel or higher)
- 35mm camera with film (optional)
- Video camera
- Note Pad for recording location, observation and description of photographs
- Audio tape recorder and blank tapes





## **APPENDIX B**

### **FEMA Background Check and Badging Forms**

September 29, 2008

September 29, 2008

This Checklist must be attached to each packet submitted.

## FEMA INVESTIGATION PACKET CHECKLIST

### FEDERAL CONTRACTOR

Name: \_\_\_\_\_ Date: \_\_\_\_\_

SSN: \_\_\_\_\_

Contact Number: (Day) \_\_\_\_\_ (Night) \_\_\_\_\_

Your packet must contain the documents listed below.

Initial beside each document to verify that it is attached:

\_\_\_\_\_ e-QIP Signature Pages for SF 85P, Questionnaire for Public Trust Positions

\_\_\_\_\_ FD-258 Applicant Fingerprint Cards (two cards)

\_\_\_\_\_ Fair Credit Reporting Act (signed)

\_\_\_\_\_ DHS Form 11000-6 (08-04) Non-Disclosure Agreement

### **Send the completed packet and this checklist to:**

FEMA Personnel Security  
500 C Street, SW, Room 514  
Washington, DC 20472  
Attn: Ramona Samuel or Helen Canady  
Case Management Unit

September 29, 2008

September 29, 2008

## Questionnaire for Public Trust Positions

Follow instructions fully or we cannot process your form. Be sure to sign and date the certification statement on Page 7 and the release on Page 8. *If you have any questions*, call the office that gave you the form.

### Purpose of this Form

The U.S. Government conducts background investigations and reinvestigations to establish that applicants or incumbents either employed by the Government or working for the Government under contract, are suitable for the job and/or eligible for a public trust or sensitive position. Information from this form is used primarily as the basis for this investigation. Complete this form only after a conditional offer of employment has been made.

Giving us the information we ask for is voluntary. However, we may not be able to complete your investigation, or complete it in a timely manner, if you don't give us each item of information we request. This may affect your placement or employment prospects.

### Authority to Request this Information

The U.S. Government is authorized to ask for this information under Executive Orders 10450 and 10577, sections 3301 and 3302 of title 5, U.S. Code; and parts 5, 731, 732, and 736 of Title 5, Code of Federal Regulations.

Your Social Security number is needed to keep records accurate, because other people may have the same name and birth date. Executive Order 9397 also asks Federal agencies to use this number to help identify individuals in agency records.

### The Investigative Process

Background investigations are conducted using your responses on this form and on your Declaration for Federal Employment (OF 306) to develop information to show whether you are reliable, trustworthy, of good conduct and character, and loyal to the United States. The information that you provide on this form is confirmed during the investigation. Your current employer must be contacted as part of the investigation, even if you have previously indicated on applications or other forms that you do not want this.

In addition to the questions on this form, inquiry also is made about a person's adherence to security requirements, honesty and integrity, vulnerability to exploitation or coercion, falsification, misrepresentation, and any other behavior, activities, or associations that tend to show the person is not reliable, trustworthy, or loyal.

### Your Personal Interview

Some investigations will include an interview with you as a normal part of the investigative process. This provides you the opportunity to update, clarify, and explain information on your form more completely, which often helps to complete your investigation faster. It is important that the interview be conducted as soon as possible after you are contacted. Postponements will delay the processing of your investigation, and declining to be interviewed may result in your investigation being delayed or canceled.

You will be asked to bring identification with your picture on it, such as a valid State driver's license, to the interview. There are other documents you may be asked to bring to verify your identity as well.

These include documentation of any legal name change, Social Security card, and/or birth certificate.

You may also be asked to bring documents about information you provided on the form or other matters requiring specific attention. These matters include alien registration, delinquent loans or taxes, bankruptcy, judgments, liens, or other financial obligations, agreements involving child custody or support, alimony or property settlements, arrests, convictions, probation, and/or parole.

### Instructions for Completing this Form

1. Follow the instructions given to you by the person who gave you the form and any other clarifying instructions furnished by that person to assist you in completion of the form. Find out how many copies of the form you are to turn in. You must sign and date, in black ink, the original and each copy you submit.

2. Type or legibly print your answers in black ink (if your form is not legible, it will not be accepted). You may also be asked to submit your form in an approved electronic format.

3. All questions on this form must be answered. If no response is necessary or applicable, indicate this on the form (for example, enter "None" or "N/A"). If you find that you cannot report an exact date, approximate or estimate the date to the best of your ability and indicate this by marking "APPROX." or "EST."

4. Any changes that you make to this form after you sign it must be initialed and dated by you. Under certain limited circumstances, agencies may modify the form consistent with your intent.

5. You must use the State codes (abbreviations) listed on the back of this page when you fill out this form. Do not abbreviate the names of cities or foreign countries.

6. The 5-digit postal ZIP codes are needed to speed the processing of your investigation. The office that provided the form will assist you in completing the ZIP codes.

7. All telephone numbers must include area codes.

8. All dates provided on this form must be in Month/Day/Year or Month/Year format. Use numbers (1-12) to indicate months. For example, June 10, 1978, should be shown as 6/10/78.

9. Whenever "City (Country)" is shown in an address block, also provide in that block the name of the country when the address is outside the United States.

10. If you need additional space to list your residences or employments/self-employments/unemployments or education, you should use a continuation sheet, SF 86A. If additional space is needed to answer other items, use a blank piece of paper. Each blank piece of paper you use must contain **your name and Social Security Number at the top of the page.**

### Final Determination on Your Eligibility

Final determination on your eligibility for a public trust or sensitive position and your being granted a security clearance is the responsibility of the Office of Personnel Management or the Federal agency that requested your investigation. You may be provided the opportunity personally to explain, refute, or clarify any information before a final decision is made.

### Penalties for Inaccurate or False Statements

The U.S. Criminal Code (title 18, section 1001) provides that knowingly falsifying or concealing a material fact is a felony which may result in fines of up to \$10,000, and/or 5 years imprisonment, or both. In addition, Federal agencies generally fire, do not grant a security clearance, or disqualify individuals who have materially and deliberately falsified these forms, and this remains a part of the permanent record for future placements. Because the position for which you are being considered is one of public trust or is sensitive, your trustworthiness is a very important consideration in deciding your suitability for placement or retention in the position.

Your prospects of placement are better if you answer all questions truthfully and completely. You will have adequate opportunity to explain any information you give us on the form and to make your comments part of the record.

### Disclosure of Information

The information you give us is for the purpose of investigating you for a position; we will protect it from unauthorized disclosure. The collection, maintenance, and disclosure of background investigative information is governed by the Privacy Act. The agency which requested the investigation and the agency which conducted the investigation have published notices in the Federal Register describing the system of records in which your records will be maintained. You may obtain copies of the relevant notices from the person who gave you this form. The information on this form, and information we collect during an investigation may be disclosed without your consent as permitted by the Privacy Act (5 USC 552a(b)) and as follows:

## PRIVACY ACT ROUTINE USES

1. To the Department of Justice when: (a) the agency or any component thereof; or (b) any employee of the agency in his or her official capacity; or (c) any employee of the agency in his or her individual capacity where the Department of Justice has agreed to represent the employee; or (d) the United States Government, is a party to litigation or has interest in such litigation, and by careful review, the agency determines that the records are both relevant and necessary to the litigation and the use of such records by the Department of Justice is therefore deemed by the agency to be for a purpose that is compatible with the purpose for which the agency collected the records.
2. To a court or adjudicative body in a proceeding when: (a) the agency or any component thereof; or (b) any employee of the agency in his or her official capacity; or (c) any employee of the agency in his or her individual capacity where the Department of Justice has agreed to represent the employee; or (d) the United States Government is a party to litigation or has interest in such litigation, and by careful review, the agency determines that the records are both relevant and necessary to the litigation and the use of such records is therefore deemed by the agency to be for a purpose that is compatible with the purpose for which the agency collected the records.
3. Except as noted in Question 21, when a record on its face, or in conjunction with other records, indicates a violation or potential violation of law, whether civil, criminal, or regulatory in nature, and whether arising by general statute, particular program statute, regulation, rule, or order issued pursuant thereto, the relevant records may be disclosed to the appropriate Federal, foreign, State, local, tribal, or other public authority responsible for enforcing, investigating or prosecuting such violation or charged with enforcing or implementing the statute, rule, regulation, or order.
4. To any source or potential source from which information is requested in the course of an investigation concerning the hiring or retention of an employee or other personnel action, or the issuing or retention of a security clearance, contract, grant, license, or other benefit, to the extent necessary to identify the individual, inform the source of the nature and purpose of the investigation, and to identify the type of information requested.

5. To a Federal, State, local, foreign, tribal, or other public authority the fact that this system of records contains information relevant to the retention of an employee, or the retention of a security clearance, contract, license, grant, or other benefit. The other agency or licensing organization may then make a request supported by written consent of the individual for the entire record if it so chooses. No disclosure will be made unless the information has been determined to be sufficiently reliable to support a referral to another office within the agency or to another Federal agency for criminal, civil, administrative, personnel, or regulatory action.
6. To contractors, grantees, experts, consultants, or volunteers when necessary to perform a function or service related to this record for which they have been engaged. Such recipients shall be required to comply with the Privacy Act of 1974, as amended.
7. To the news media or the general public, factual information the disclosure of which would be in the public interest and which would not constitute an unwarranted invasion of personal privacy.
8. To a Federal, State, or local agency, or other appropriate entities or individuals, or through established liaison channels to selected foreign governments, in order to enable an intelligence agency to carry out its responsibilities under the National Security Act of 1947 as amended, the CIA Act of 1949 as amended, Executive Order 12333 or any successor order, applicable national security directives, or classified implementing procedures approved by the Attorney General and promulgated pursuant to such statutes, orders or directives.
9. To a Member of Congress or to a Congressional staff member in response to an inquiry of the Congressional office made at the written request of the constituent about whom the record is maintained.
10. To the National Archives and Records Administration for records management inspections conducted under 44 USC 2904 and 2905.
11. To the Office of Management and Budget when necessary to the review of private relief legislation.

## STATE CODES (ABBREVIATIONS)

Alabama	AL	Hawaii	HI	Massachusetts	MA	New Mexico	NM	South Dakota	SD
Alaska	AK	Idaho	ID	Michigan	MI	New York	NY	Tennessee	TN
Arizona	AZ	Illinois	IL	Minnesota	MN	North Carolina	NC	Texas	TX
Arkansas	AR	Indiana	IN	Mississippi	MS	North Dakota	ND	Utah	UT
California	CA	Iowa	IA	Missouri	MO	Ohio	OH	Vermont	VT
Colorado	CO	Kansas	KS	Montana	MT	Oklahoma	OK	Virginia	VA
Connecticut	CT	Kentucky	KY	Nebraska	NE	Oregon	OR	Washington	WA
Delaware	DE	Louisiana	LA	Nevada	NV	Pennsylvania	PA	West Virginia	WV
Florida	FL	Maine	ME	New Hampshire	NH	Rhode Island	RI	Wisconsin	WI
Georgia	GA	Maryland	MD	New Jersey	NJ	South Carolina	SC	Wyoming	WY
American Samoa	AS	District of Columbia	DC	Guam	GU	Northern Marianas	CM	Puerto Rico	PR
Trust Territory	TT	Virgin Islands	VI						

## PUBLIC BURDEN INFORMATION

Public burden reporting for this collection of information is estimated to average 60 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Reports and Forms Management Officer, U.S. Office of Personnel Management, 1900 E Street, N.W., Room CHP-500, Washington, D.C. 20415. Do not send your completed form to this address.

**QUESTIONNAIRE FOR  
 PUBLIC TRUST POSITIONS**

OPM USE ONLY	Codes	Case Number
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**Agency Use Only (Complete items A through P using instructions provided by USOPM)**

<b>A</b> Type of Investigation		<b>B</b> Extra Coverage		<b>C</b> Sensitivity/Risk Level		<b>D</b> Comput/ADP		<b>E</b> Nature of Action Code		<b>F</b> Date of Action		Month	Day	Year
<b>G</b> Geographic Location				<b>H</b> Position Code		<b>I</b> Position Title								
<b>J</b> SON		<b>K</b> Location of Official Personnel Folder		None NPRC At SON		Other Address						ZIP Code		
<b>L</b> SOI		<b>M</b> Location of Security Folder		None At SOI NPI		Other Address						ZIP Code		
<b>N</b> OPAC-ALC Number				<b>O</b> Accounting Data and/or Agency Case Number										
<b>P</b> Requesting Official			Name and Title			Signature			Telephone Number			Date		

**Persons completing this form should begin with the questions below.**

<b>1 FULL NAME</b> *If you have only initials in your name, use them and state (IO). *If you have no middle name, enter "NMN".		- If you are a "Jr.," "Sr.," "II," etc., enter this in the box after your middle name.				<b>2 DATE OF BIRTH</b>			
Last Name		First Name		Middle Name		Jr., II, etc.	Month	Day	Year

<b>3 PLACE OF BIRTH</b> - Use the two letter code for the State.				<b>4 SOCIAL SECURITY NUMBER</b>					
City		County		State	Country (if not in the United States)				

**5 OTHER NAMES USED**

Name		Month/Year		To		Name		Month/Year		To	
#1						#3					
Name		Month/Year		To		Name		Month/Year		To	
#2						#4					

**6 OTHER IDENTIFYING INFORMATION**

Height (feet and inches)		Weight (pounds)		Hair Color		Eye Color		Sex (Mark one box)	
								Female	Male

**7 TELEPHONE NUMBERS**

<b>Work</b> (Include Area Code and extension)				<b>Home</b> (Include Area Code)			
Day		Night		Day		Night	
( )		( )		( )		( )	

**8 CITIZENSHIP**

<b>a</b> Mark the box at the right that reflects your current citizenship status, and follow its instructions.	I am a U.S. citizen or national by birth in the U.S. or U.S. territory/possession. Answer items b and d.			<b>b</b> Your Mother's Maiden Name
	I am a U.S. citizen, but I was NOT born in the U.S. Answer items b, c and d.			
	I am not a U.S. citizen. Answer items b and e.			

**c UNITED STATES CITIZENSHIP** If you are a U.S. Citizen, but were not born in the U.S., provide information about one or more of the following proofs of your citizenship.

**Naturalization Certificate** (Where were you naturalized?)

Court		City		State		Certificate Number		Month/Day/Year Issued	
-------	--	------	--	-------	--	--------------------	--	-----------------------	--

**Citizenship Certificate** (Where was the certificate issued?)

City		State		Certificate Number		Month/Day/Year Issued	
------	--	-------	--	--------------------	--	-----------------------	--

**State Department Form 240 - Report of Birth Abroad of a Citizen of the United States**

Give the date the form was prepared and give an explanation if needed.		Month/Day/Year		Explanation	
--	--	----------------	--	-------------	--

**U.S. Passport**

This may be either a current or previous U.S. Passport			Passport Number		Month/Day/Year Issued	
--	--	--	-----------------	--	-----------------------	--

**d DUAL CITIZENSHIP** If you are (or were) a dual citizen of the United States and another country, provide the name of that country in the space to the right.

Country	
---------	--

**e ALIEN** If you are an alien, provide the following information:

Place You Entered the United States:		City		State		Date You Entered U.S.		Alien Registration Number		Country(ies) of Citizenship	
						Month Day Year					

**9 WHERE YOU HAVE LIVED**

List the places where you have lived, beginning with the most recent (#1) and working back 7 years. All periods must be accounted for in your list. Be sure to indicate the actual physical location of your residence: do not use a post office box as an address, do not list a permanent address when you were actually living at a school address, etc. Be sure to specify your location as closely as possible: for example, do not list only your base or ship, list your barracks number or home port. You may omit temporary military duty locations under 90 days (list your permanent address instead), and you should use your APO/FPO address if you lived overseas.

For any address in the last 5 years, list a person who knew you at that address, and who preferably still lives in that area (do not list people for residences completely outside this 5-year period, and do not list your spouse, former spouses, or other relatives). Also for addresses in the last 5 years, if the address is "General Delivery," a Rural or Star Route, or may be difficult to locate, provide directions for locating the residence on an attached continuation sheet.

#1	Month/Year To	Month/Year Present	Street Address	Apt. #	City (Country)	State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#2	Month/Year To	Month/Year	Street Address	Apt. #	City (Country)	State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#3	Month/Year To	Month/Year	Street Address	Apt. #	City (Country)	State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#4	Month/Year To	Month/Year	Street Address	Apt. #	City (Country)	State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#5	Month/Year To	Month/Year	Street Address	Apt. #	City (Country)	State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							

**10 WHERE YOU WENT TO SCHOOL**

List the schools you have attended, beyond Junior High School, beginning with the most recent (#1) and working back 7 years. List all College or University degrees and the dates they were received. If all of your education occurred more than 7 years ago, list your most recent education beyond high school, no matter when that education occurred.

Use one of the following codes in the "Code" block:

- 1 - High School                      2 - College/University/Military College                      3 - Vocational/Technical/Trade School

For schools you attended in the past 3 years, list a person who knew you at school (an instructor, student, etc.). Do not list people for education completely outside this 3-year period.

For correspondence schools and extension classes, provide the address where the records are maintained.

#1	Month/Year To	Month/Year	Code	Name of School	Degree/Diploma/Other	Month/Year Awarded	
Street Address and City (Country) of School							
						State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#2	Month/Year To	Month/Year	Code	Name of School	Degree/Diploma/Other	Month/Year Awarded	
Street Address and City (Country) of School							
						State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							
#3	Month/Year To	Month/Year	Code	Name of School	Degree/Diploma/Other	Month/Year Awarded	
Street Address and City (Country) of School							
						State	ZIP Code
Name of Person Who Knew You			Street Address	Apt. #	City (Country)	State	ZIP Code
Telephone Number ( )							

Enter your Social Security Number before going to the next page  $\longrightarrow$



**11 YOUR EMPLOYMENT ACTIVITIES**

List your employment activities, beginning with the present (#1) and working back 7 years. You should list all full-time work, part-time work, military service, temporary military duty locations over 90 days, self-employment, other paid work, and all periods of unemployment. The entire 7-year period must be accounted for without breaks, but you need not list employments before your 16th birthday.

● **Code.** Use one of the codes listed below to identify the type of employment:

- |                                   |   |  |           |
|-----------------------------------|---|--|-----------|
| 1 - Active military duty stations | 5 - State Government (Non-Federal employment)                               | 7 - Unemployment (include name of person who can verify)     | 8 - Other |
| 2 - National Guard/Reserve        |   |  |           |
| 3 - U.S.P.H.S. Commissioned Corps | 6 - Self-employment (include business and/or name of person who can verify) | 8 - Federal Contractor (List Contractor, not Federal agency) |           |
| 4 - Other Federal employment      |   |  |           |

● **Employer/Verifier Name.** List the business name of your employer or the name of the person who can verify your self-employment or unemployment in this block. If military service is being listed, include your duty location or home port here as well as your branch of service. You should provide separate listings to reflect changes in your military duty locations or home ports.

● **Previous Periods of Activity.** Complete these lines if you worked for an employer on more than one occasion at the same location. After entering the most recent period of employment in the initial numbered block, provide previous periods of employment at the same location on the additional lines provided. For example, if you worked at XY Plumbing in Denver, CO, during 3 separate periods of time, you would enter dates and information concerning the most recent period of employment first, and provide dates, position titles, and supervisors for the two previous periods of employment on the lines below that information.

<b>#1</b>	Month/Year To	Month/Year Present	Code	Employer/Verifier Name/Military Duty Location	Your Position Title/Military Rank		
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number (   )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number (   )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number (   )
PREVIOUS PERIODS OF ACTIVITY (Block #1)	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						
<b>#2</b>	Month/Year To	Month/Year	Code	Employer/Verifier Name/Military Duty Location		Your Position Title/Military Rank	
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number (   )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number (   )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number (   )
PREVIOUS PERIODS OF ACTIVITY (Block #2)	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						
<b>#3</b>	Month/Year To	Month/Year	Code	Employer/Verifier Name/Military Duty Location		Your Position Title/Military Rank	
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number (   )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number (   )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number (   )
PREVIOUS PERIODS OF ACTIVITY (Block #3)	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						
	Month/Year	Month/Year		Position Title	Supervisor		
	To						

Enter your Social Security Number before going to the next page

**YOUR EMPLOYMENT ACTIVITIES (CONTINUED)**

<b>#4</b>	Month/Year To	Month/Year	Code	Employer/Verifier Name/Military Duty Location	Your Position Title/Military Rank		
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number ( )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number ( )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number ( )

PREVIOUS PERIODS OF ACTIVITY (Block #4)	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor

<b>#5</b>	Month/Year To	Month/Year	Code	Employer/Verifier Name/Military Duty Location	Your Position Title/Military Rank		
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number ( )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number ( )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number ( )

PREVIOUS PERIODS OF ACTIVITY (Block #5)	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor

<b>#6</b>	Month/Year To	Month/Year	Code	Employer/Verifier Name/Military Duty Location	Your Position Title/Military Rank		
Employer's/Verifier's Street Address				City (Country)	State	ZIP Code	Telephone Number ( )
Street Address of Job Location (if different than Employer's Address)				City (Country)	State	ZIP Code	Telephone Number ( )
Supervisor's Name & Street Address (if different than Job Location)				City (Country)	State	ZIP Code	Telephone Number ( )

PREVIOUS PERIODS OF ACTIVITY (Block #6)	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor
	Month/Year To	Month/Year	Position Title	Supervisor

<b>12</b> YOUR EMPLOYMENT RECORD	Yes	No
Has any of the following happened to you in the last 7 years? If "Yes," begin with the most recent occurrence and go backward, providing date fired, quit, or left, and other information requested.		

Use the following codes and explain the reason your employment was ended:

- 1 - Fired from a job
- 2 - Quit a job after being told you'd be fired
- 3 - Left a job by mutual agreement following allegations of misconduct
- 4 - Left a job by mutual agreement following allegations of unsatisfactory performance
- 5 - Left a job for other reasons under unfavorable circumstances

Month/Year	Code	Specify Reason	Employer's Name and Address (Include city/Country if outside U.S.)	State	ZIP Code

Enter your Social Security Number before going to the next page

**13 PEOPLE WHO KNOW YOU WELL**

List three people who know you well and live in the United States. They should be good friends, peers, colleagues, college roommates, etc., whose combined association with you covers as well as possible the last 7 years. Do not list your spouse, former spouses, or other relatives, and try not to list anyone who is listed elsewhere on this form.

Name <b>#1</b>	Dates Known Month/Year    Month/Year To	Telephone Number Day Night (    )
Home or Work Address		City (Country)    State    ZIP Code
Name <b>#2</b>	Dates Known Month/Year    Month/Year To	Telephone Number Day Night (    )
Home or Work Address		City (Country)    State    ZIP Code
Name <b>#3</b>	Dates Known Month/Year    Month/Year To	Telephone Number Day Night (    )
Home or Work Address		City (Country)    State    ZIP Code

**14 YOUR MARITAL STATUS**

Mark one of the following boxes to show your current marital status:

<input type="checkbox"/> 1 - Never married (go to question 15)	<input type="checkbox"/> 3 - Separated	<input type="checkbox"/> 6 - Divorced
<input type="checkbox"/> 2 - Married	<input type="checkbox"/> 4 - Legally Separated	<input type="checkbox"/> 8 - Widowed

Current Spouse: Complete the following about your current spouse.

Full Name	Date of Birth (Mo./Day/Yr.)	Place of Birth (Include country if outside the U.S.)	Social Security Number
Other Names Used (Specify maiden name, names by other marriages, etc., and show dates used for each name)			
Country of Citizenship	Date Married (Mo./Day/Yr.)	Place Married (Include country if outside the U.S.)	State
If Separated, Date of Separation (Mo./Day/Yr.)	If Legally Separated, Where is the Record Located? City (Country)		State
Address of Current Spouse (Street, city, and country if outside the U.S.)			State    ZIP Code

**15 YOUR RELATIVES**

Give the full name, correct code, and other requested information for each of your relatives, living or dead, specified below.

- |                     |                |                          |               |
|---------------------|----------------|--------------------------|---------------|
| 1 - Mother (first)  | 3 - Stepmother | 6 - Foster Parent        | 7 - Stepchild |
| 2 - Father (second) | 4 - Stepfather | 8 - Child (adopted also) |               |

Full Name (if deceased, check box on the left before entering name)	Code	Date of Birth Month/Day/Year	Country of Birth	Country(ies) of Citizenship	Current Street Address and City (country) of Living Relatives	State
	1					
	2					

Enter your Social Security Number before going to the next page →

<b>16 YOUR MILITARY HISTORY</b>	<b>a</b> Have you served in the United States military?	Yes	No
	<b>b</b> Have you served in the United States Merchant Marine?		

List all of your military service below, including service in Reserve, National Guard, and U.S. Merchant Marine. Start with the most recent period of service (#1) and work backward. If you had a break in service, each separate period should be listed.

- Code. Use one of the codes listed below to identify your branch of service:  
 1 - Air Force 2 - Army 3 - Navy 4 - Marine Corps 6 - Coast Guard 8 - Merchant Marine 7 - National Guard

- O/E. Mark "O" block for Officer or "E" block for Enlisted.
- Status. "X" the appropriate block for the status of your service during the time that you served. If your service was in the National Guard, do not use an "X"; use the two-letter code for the state to mark the block.
- Country. If your service was with other than the U.S. Armed Forces, identify the country for which you served.

Month/Year	Month/Year	Code	Service/Certificate No.	O	E	Status				Country
						Active	Active Reserve	Inactive Reserve	National Guard (State)	
To										
To										

<b>17 YOUR SELECTIVE SERVICE RECORD</b>	<b>a</b> Are you a male born after December 31, 1959? If "No," go to 18. If "Yes," go to b.	Yes	No
	<b>b</b> Have you registered with the Selective Service System? If "Yes," provide your registration number. If "No," show the reason for your legal exemption below.		

Registration Number	Legal Exemption Explanation
---------------------	-----------------------------

<b>18 YOUR INVESTIGATIONS RECORD</b>	<b>a</b> Has the United States Government ever investigated your background and/or granted you a security clearance? If "Yes," use the codes that follow to provide the requested information below. If "Yes," but you can't recall the investigating agency and/or the security clearance received, enter "Other" agency code or clearance code, as appropriate, and "Don't know" or "Don't recall" under the "Other Agency" heading, below. If your response is "No," or you don't know or can't recall if you were investigated and cleared, check the "No" box.	Yes	No
--------------------------------------	---	-----	----

- Codes for Investigating Agency  
 1 - Defense Department 4 - FBI  
 2 - State Department 5 - Treasury Department  
 3 - Office of Personnel Management 8 - Other (Specify)
- Codes for Security Clearance Received  
 0 - Not Required 3 - Top Secret 8 - L  
 1 - Confidential 4 - Sensitive Compartmented Information 7 - Other  
 2 - Secret 6 - Q

Month/Year	Agency Code	Other Agency	Clearance Code	Month/Year	Agency Code	Other Agency	Clearance Code

<b>b</b> To your knowledge, have you ever had a clearance or access authorization denied, suspended, or revoked, or have you ever been debarred from government employment? If "Yes," give date of action and agency. Note: An administrative downgrade or termination of a security clearance is not a revocation.	Yes	No
---	-----	----


Month/Year	Department or Agency Taking Action	Month/Year	Department or Agency Taking Action

<b>19 FOREIGN COUNTRIES YOU HAVE VISITED</b>
--

List foreign countries you have visited, except on travel under official Government orders, beginning with the most current (#1) and working back 7 years. (Travel as a dependent or contractor must be listed.)

- Use one of these codes to indicate the purpose of your visit: 1 - Business 2 - Pleasure 3 - Education 4 - Other
- Include short trips to Canada or Mexico. If you have lived near a border and have made short (one day or less) trips to the neighboring country, you do not need to list each trip. Instead, provide the time period, the code, the country, and a note ("Many Short Trips").
- Do not repeat travel covered in Items 9, 10, or 11.

Month/Year	Month/Year	Code	Country	Month/Year	Month/Year	Code	Country
#1	To			#5	To		
#2	To			#6	To		
#3	To			#7	To		
#4	To			#8	To		

Enter your Social Security Number before going to the next page 

**20 YOUR POLICE RECORD** (Do not include anything that happened before your 16th birthday.)

In the last 7 years, have you been arrested for, charged with, or convicted of any offense(s)? (Leave out traffic fines of less than \$150.)

If you answered "Yes," explain your answer(s) in the space provided.

Month/Year	Offense	Action Taken	Law Enforcement Authority or Court (City and county/county if outside the U.S.)	State	ZIP Code

**21 ILLEGAL DRUGS**

The following questions pertain to the illegal use of drugs or drug activity. You are required to answer the questions fully and truthfully, and your failure to do so could be grounds for an adverse employment decision or action against you, but neither your truthful responses nor information derived from your responses will be used as evidence against you in any subsequent criminal proceeding.

- a** In the last year, have you illegally used any controlled substance, for example, marijuana, cocaine, crack cocaine, hashish, narcotics (opium, morphine, codeine, heroin, etc.), amphetamines, depressants (barbiturates, methaqualone, tranquilizers, etc.), hallucinogenics (LSD, PCP, etc.), or prescription drugs?
- b** In the last 7 years, have you been involved in the illegal purchase, manufacture, trafficking, production, transfer, shipping, receiving, or sale of any narcotic, depressant, stimulant, hallucinogen, or cannabis, for your own intended profit or that of another?

If you answered "Yes" to "a" above, provide information relating to the types of substance(s), the nature of the activity, and any other details relating to your involvement with illegal drugs. Include any treatment or counseling received.

Month/Year	Month/Year	Controlled Substance/Prescription Drug Used	Number of Times Used
To			
To			
To			

**22 YOUR FINANCIAL RECORD**

- a** In the last 7 years, have you, or a company over which you exercised some control, filed for bankruptcy, been declared bankrupt, been subject to a tax lien, or had legal judgment rendered against you for a debt? If you answered "Yes," provide date of initial action and other information requested below.

Month/Year	Type of Action	Name Action Occurred Under	Name/Address of Court or Agency Handling Case	State	ZIP Code

- b** Are you now over 180 days delinquent on any loan or financial obligation? Include loans or obligations funded or guaranteed by the Federal Government.

If you answered "Yes," provide the information requested below:

Month/Year	Type of Loan or Obligation and Account #	Name/Address of Creditor or Obligor	State	ZIP Code

After completing this form and any attachments, you should review your answers to all questions to make sure the form is complete and accurate, and then sign and date the following certification and sign and date the release on Page 8.

**Certification That My Answers Are True**

My statements on this form, and any attachments to it, are true, complete, and correct to the best of my knowledge and belief and are made in good faith. I understand that a knowing and willful false statement on this form can be punished by fine or imprisonment or both. (See section 1001 of title 18, United States Code).

Signature (Sign in ink)

Date

Enter your Social Security Number before going to the next page →

## UNITED STATES OF AMERICA

### AUTHORIZATION FOR RELEASE OF INFORMATION

Carefully read this authorization to release information about you, then sign and date it in ink.

**I Authorize** any investigator, special agent, or other duly accredited representative of the authorized Federal agency conducting my background investigation, to obtain any information relating to my activities from individuals, schools, residential management agents, employers, criminal justice agencies, credit bureaus, consumer reporting agencies, collection agencies, retail business establishments, or other sources of information. This information may include, but is not limited to, my academic, residential, achievement, performance, attendance, disciplinary, employment history, criminal history record information, and financial and credit information. I authorize the Federal agency conducting my investigation to disclose the record of my background investigation to the requesting agency for the purpose of making a determination of suitability or eligibility for a security clearance.

**I Understand** that, for financial or lending institutions, medical institutions, hospitals, health care professionals, and other sources of information, a separate specific release will be needed, and I may be contacted for such a release at a later date. Where a separate release is requested for information relating to mental health treatment or counseling, the release will contain a list of the specific questions, relevant to the job description, which the doctor or therapist will be asked.

**I Further Authorize** any investigator, special agent, or other duly accredited representative of the U.S. Office of Personnel Management, the Federal Bureau of Investigation, the Department of Defense, the Defense Investigative Service, and any other authorized Federal agency, to request criminal record information about me from criminal justice agencies for the purpose of determining my eligibility for assignment to, or retention in a sensitive National Security position, in accordance with 5 U.S.C. 9101. I understand that I may request a copy of such records as may be available to me under the law.

**I Authorize** custodians of records and other sources of information pertaining to me to release such information upon request of the investigator, special agent, or other duly accredited representative of any Federal agency authorized above regardless of any previous agreement to the contrary.

**I Understand** that the information released by records custodians and sources of information is for official use by the Federal Government only for the purposes provided in this Standard Form 85P, and that it may be redisclosed by the Government only as authorized by law.

Copies of this authorization that show my signature are as valid as the original release signed by me. This authorization is valid for five (5) years from the date signed or upon the termination of my affiliation with the Federal Government, whichever is sooner.

Signature (Sign in Ink)		Full Name (Type or Print Legibly)		Date Signed
Other Names Used				Social Security Number
Current Address (Street, City)		State	ZIP Code	Home Telephone Number (Include Area Code) (     )

## UNITED STATES OF AMERICA

### AUTHORIZATION FOR RELEASE OF MEDICAL INFORMATION

Carefully read this authorization to release information about you, then sign and date it in black ink.

#### Instructions for Completing this Release

This is a release for the investigator to ask your health practitioner(s) the three questions below concerning your mental health consultations. Your signature will allow the practitioner(s) to answer only these questions.

I am seeking assignment to or retention in a position of public trust with the Federal Government as a(n)

---

(Investigator instructed to write in position title.)

As part of the investigative process, I hereby authorize the investigator, special agent, or duly accredited representative of the authorized Federal agency conducting my background investigation, to obtain the following information relating to my mental health consultations:

Does the person under investigation have a condition or treatment that could impair his/her judgment or reliability?

If so, please describe the nature of the condition and the extent and duration of the impairment or treatment.

What is the prognosis?

I understand that the information released pursuant to this release is for use by the Federal Government only for purposes provided in the Standard Form 85P and that it may be redisclosed by the Government only as authorized by law.

Copies of this authorization that show my signature are as valid as the original release signed by me. This authorization is valid for 1 year from the date signed or upon termination of my affiliation with the Federal Government, whichever is sooner.

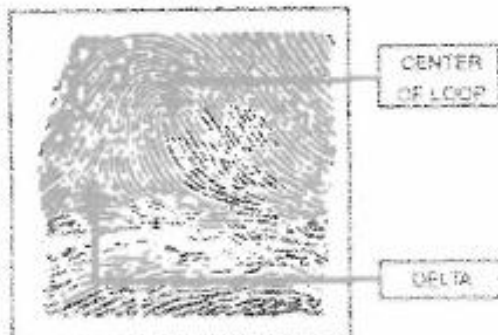
Signature (Sign in ink)	Full Name (Type or Print Legibly)	Date Signed
Other Names Used		Social Security Number
Current Address (Street, City)	State	ZIP Code
		Home Telephone Number (Include Area Code) {      }

September 29, 2008

**FEDERAL BUREAU OF INVESTIGATION  
 UNITED STATES DEPARTMENT OF JUSTICE  
 CJIS DIVISION/CLARKSBURG, WV 26306**

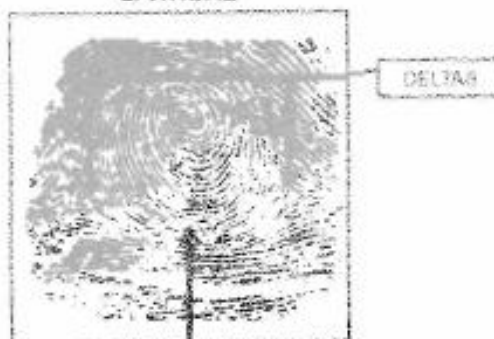
## APPLICANT

### 1. LOOP



THE LINES BETWEEN CENTER OF LOOP AND DELTA MUST SHOW

### 2. WHORL



THESE LINES RUNNING BETWEEN DELTAS MUST BE CLEAR

### 3. ARCH



ARCHES HAVE NO DELTAS

#### TO OBTAIN CLASSIFIABLE FINGERPRINTS:

1. USE BLACK PRINTERS INK
2. DISTRIBUTE INK EVENLY ON PRINTING SURF.
3. WASH AND DRY FINGERS THOROUGHLY.
4. ROLL FINGERS FROM NAIL TO NAIL, AND AVOID ALLOWING FINGERS TO ROT.
5. BE SURE IMPRESSIONS ARE RECORDED IN CORRECT ORDER.
6. NOTE IN THE APPROPRIATE FINGER BLOCKS IF APPLICANT IS MISSING ONE OR MORE FINGERS IF NOT MISSING, ALL TEN IMPRESSIONS MUST BE FINGERED WITH CARE AND DEFORMITIES IN IF SOME PHYSICAL CONDITION MAKES IT IMPOSSIBLE TO OBTAIN PERFECT IMPRESSIONS, SOME OBTAINED.
8. EXAMINE THE COMPLETED PRINTS TO SEE IF THEY CAN BE CLASSIFIED, BEARING IN MIND THAT TAIL INTO THE PATTERN SHOWN ON THIS CARD (OTHER PATTERNS OCCUR INFREQUENTLY AT

#### THIS CARD FOR USE BY:

LEAVE THE

1. LAW ENFORCEMENT AGENCIES IN FINGERPRINTING APPLICANTS FOR LAW ENFORCEMENT POSITIONS.
2. OFFICIALS OF STATE AND LOCAL GOVERNMENTS FOR PURPOSES OF EMPLOYMENT, LICENSING, AND PERMITS, AS AUTHORIZED BY STATE STATUTES AND APPROVED BY THE ATTORNEY GENERAL OF THE UNITED STATES. LOCAL AND COUNTY GOVERNMENTS, UNLESS SPECIFICALLY SAID ON APPLICABLE STATE STATUTES DO NOT SATISFY THIS REQUIREMENT.
3. U.S. GOVERNMENT AGENCIES AND OTHER ENTITIES REQUIRED BY FEDERAL LAW.
4. OFFICIALS OF FEDERALLY CHARTERED OR INSURED BANKS AND INSTITUTIONS TO PROMOTE OR MAINTAIN THE SECURITY OF THOSE INSTITUTIONS.

#### INSTRUCTIONS:

1. PRINTS MUST FIRST BE CHECKED THROUGH THE APPROPRIATE STATE IDENTIFICATION BUREAU, AND ONLY THOSE FINGERPRINTS FOR WHICH NO DISQUALIFYING RECORD HAS BEEN FOUND LOCALLY SHOULD BE SUBMITTED FOR FBI SEARCH.
  2. PRIVACY ACT OF 1974 (PL 93-502) REQUIRES THAT FEDERAL, STATE, OR LOCAL AGENCIES INFORM INDIVIDUALS WHOSE SOCIAL SECURITY NUMBER IS REQUESTED WHETHER SUCH DISCLOSURE IS MANDATORY OR VOLUNTARY, BASIS OF AUTHORITY FOR SUCH SOLICITATION AND USES WHICH WILL BE MADE OF IT.
  3. IDENTITY OF PRIVATE CONTRACTORS SHOULD BE SHOWN IN SPACE "EMPLOYER AND ADDRESS". THE CONTRIBUTOR IS THE NAME OF THE AGENCY SUBMITTING THE FINGERPRINT CARD TO THE FBI.
  4. FBI NUMBER, IF KNOWN, SHOULD ALWAYS BE FURNISHED IN THE APPROPRIATE SPACE.
- MISCELLANEOUS NO. RECORD; OTHER ARMED FORCES NO. PASSPORT NO. (EP), ALIEN REGISTRATION NO. (AR), PORT SECURITY CARD NO. (PS), SELECTIVE SERVICE NO. (SS), VETERANS ADMINISTRATION CLAIM NO. (VA).

FD-258 (REV. 5-11-99)

**GPO** U.S. GOVERNMENT PRINTING OFFICE: 2006-320-398/80100



**APPLICANT**

LEAVE BLANK

TYPE OR PRINT ALL INFORMATION IN BLACK  
LAST NAME NAM FIRST NAME MIDDLE NAME

FBI L

SIGNATURE OF PERSON FINGERPRINTED

ALIASES AKA

O  
R  
I

**USFEMADDZ  
FEMA-SECURITY OFC  
WASHINGTON, DC**

RESIDENCE OF PERSON FINGERPRINTED

CITIZENSHIP CITZ

SEX RACE HGT WGT EYES HAIR PL

DATE SIGNATURE OF OFFICIAL TAKING FINGERPRINTS

YOUR NO. OCA

LEAVE BLANK

EMPLOYER AND ADDRESS

FBI NO. FBI

CLASS \_\_\_\_\_

REASON FINGERPRINTED

ARMED FORCES NO. MNU

REF \_\_\_\_\_

SOCIAL SECURITY NO. SQC

MISCELLANEOUS NO. MNU

1. R. THUMB

2. R. INDEX

3. R. MIDDLE

4. R. RING

5. R. LITTLE

6. L. THUMB

7. L. INDEX

8. L. MIDDLE

9. L. RING

10. L. LITTLE

LEFT FOUR FINGERS TAKEN SIMULTANEOUSLY

L. THUMB

R. THUMB

RIGHT FOUR FINGERS TAKEN SIMU

**UNITED STATES OF AMERICA**  
**AUTHORIZATION TO OBTAIN CONSUMER (CREDIT) REPORT**

Carefully read this authorization to release information about you, then sign and date it in ink.

Instruction for Completing this Release

This release form authorizes the investigator to obtain a copy of your consumer (credit) report from a consumer reporting agency (credit bureau) pursuant to the provisions of the Fair Credit Reporting Act of 1970, as amended (15 U.S.C. Sec. 1681 et seq.). The Federal agency or department receiving the report will use the consumer report to assist in its adjudication of whether you satisfy the criteria to receive access or continued access to classified national security information. Your signature is required before the release form becomes valid.

**AUTHORITY TO RELEASE INFORMATION**

I hereby authorize any investigator, special agent, or other duly accredited representative of the authorized Federal agency or department conducting my background investigation, bearing this release or copy thereof that shows my signature, within five years of its date, to obtain a copy of my consumer report as that term is defined in the Fair Credit Reporting Act (FCRA) of 1970, as amended (15 U.S.C. Sec. 1681 et seq.). I understand that my consumer report will be used to assist in determining whether I satisfy the criteria to receive access or continued access to classified national security information. Furthermore, I understand that, if information in my consumer report leads to the Federal agency or department taking an action adverse to me as defined in the FCRA, that I will be given an opportunity to appeal the action consistent with applicable law, executive order, and agency or department regulation. However, I understand that I may not receive advance notice of an adverse action based in part on the consumer report if the Federal agency or department has reason to believe that advance notification will result in endangering life or physical safety of any person; flight from prosecution; destruction or tampering with evidence; intimidation of potential witnesses; compromise of classified information; or otherwise seriously jeopardize an investigation or official proceeding or unduly delay an ongoing official proceeding.

\_\_\_\_\_  
(printed name w/ middle initial)

\_\_\_\_\_  
(social security number)

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(address, include street, apartment number, city, state, and zip code)

Notice: The Privacy Act, 5 U.S.C. 522a, requires that federal agencies inform individuals, at the time information is solicited from them, whether the disclosure is mandatory or voluntary, by what authority such information is solicited, and what uses will be made of the information. You are hereby advised that the authority for soliciting your Social Security Number (SSN) is Executive Order 9397. Since other people may have the same name and birth data, your SSN will be used to identify you precisely when requesting a copy of your consumer report. Although disclosure of your SSN is not mandatory, your failure to do so may impede completion of your investigation.

September 29, 2008

**NON-DISCLOSURE AGREEMENT**

I, \_\_\_\_\_, an individual official, employee, consultant, or subcontractor of or to \_\_\_\_\_ (the Authorized Entity), intending to be legally bound, hereby consent to the terms in this Agreement in consideration of my being granted conditional access to certain information, specified below, that is owned by, produced by, or in the possession of the United States Government.

(Signer will acknowledge the category or categories of information that he or she may have access to, and the signer's willingness to comply with the standards for protection by placing his or her initials in front of the applicable category or categories.)

Initials:	<b>Protected Critical Infrastructure Information (PCI)</b>
-----------	--

I attest that I am familiar with, and I will comply with all requirements of the PCI program set out in the Critical Infrastructure Information Act of 2002 (CII Act) (Title II, Subtitle B, of the Homeland Security Act of 2002, Public Law 107-296, 196 Stat. 2135, 6 USC 101 et seq.), as amended, the implementing regulations thereto (6 CFR Part 29), as amended, and the applicable PCI Procedures Manual, as amended, and with any such requirements that may be officially communicated to me by the PCI Program Manager or the PCI Program Manager's designee.

Initials:	<b>Sensitive Security Information (SSI)</b>
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I attest that I am familiar with, and I will comply with the standards for access, dissemination, handling, and safeguarding of SSI information as cited in this Agreement and in accordance with 49 CFR Part 1520, "Protection of Sensitive Security Information," "Policies and Procedures for Safeguarding and Control of SSI," as amended, and any supplementary guidance issued by an authorized official of the Department of Homeland Security.

Initials:	<b>Other Sensitive but Unclassified (SBU)</b>
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As used in this Agreement, sensitive but unclassified information is an over-arching term that covers any information, not otherwise indicated above, which the loss of, misuse of, or unauthorized access to or modification of could adversely affect the national interest or the conduct of Federal programs, or the privacy to which individuals are entitled under Section 552a of Title 5, as amended, but which has not been specifically authorized under criteria established by an Executive Order or an Act of Congress to be kept secret in the interest of national defense or foreign policy. This includes information categorized by DHS or other government agencies as: For Official Use Only (FOUO); Official Use Only (OUO); Sensitive Homeland Security Information (SHSI); Limited Official Use (LOU); Law Enforcement Sensitive (LES); Safeguarding Information (SGI); Unclassified Controlled Nuclear Information (UCNI); and any other identifier used by other government agencies to categorize information as sensitive but unclassified.

I attest that I am familiar with, and I will comply with the standards for access, dissemination, handling, and safeguarding of the information to which I am granted access as cited in this Agreement and in accordance with the guidance provided to me relative to the specific category of information.

I understand and agree to the following terms and conditions of my access to the information indicated above:

1. I hereby acknowledge that I have received a security indoctrination concerning the nature and protection of information to which I have been provided conditional access, including the procedures to be followed in ascertaining whether other persons to whom I contemplate disclosing this information have been approved for access to it, and that I understand these procedures.
2. By being granted conditional access to the information indicated above, the United States Government has placed special confidence and trust in me and I am obligated to protect this information from unauthorized disclosure, in accordance with the terms of this Agreement and the laws, regulations, and directives applicable to the specific categories of information to which I am granted access.
3. I attest that I understand my responsibilities and that I am familiar with and will comply with the standards for protecting such information that I may have access to in accordance with the terms of this Agreement and the laws, regulations, and/or directives applicable to the specific categories of information to which I am granted access. I understand that the United States Government may conduct inspections, at any time or place, for the purpose of ensuring compliance with the conditions for access, dissemination, handling and safeguarding information under this Agreement.

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4. I will not disclose or release any information provided to me pursuant to this Agreement without proper authority or authorization. Should situations arise that warrant the disclosure or release of such information I will do so only under approved circumstances and in accordance with the laws, regulations, or directives applicable to the specific categories of information. I will honor and comply with any and all dissemination restrictions cited or verbally relayed to me by the proper authority.

5. (a) For PCII - (1) Upon the completion of my engagement as an employee, consultant, or subcontractor under the contract, or the completion of my work on the PCII Program, whichever occurs first, I will surrender promptly to the PCII Program Manager or his designee, or to the appropriate PCII officer, PCII of any type whatsoever that is in my possession.

(2) If the Authorized Entity is a United States Government contractor performing services in support of the PCII Program, I will not request, obtain, maintain, or use PCII unless the PCII Program Manager or Program Manager's designee has first made in writing, with respect to the contractor, the certification as provided for in Section 29.8(c) of the implementing regulations to the CII Act, as amended.

(b) For SSI and SBU - I hereby agree that material which I have in my possession and containing information covered by this Agreement, will be handled and safeguarded in a manner that affords sufficient protection to prevent the unauthorized disclosure of or inadvertent access to such information, consistent with the laws, regulations, or directives applicable to the specific categories of information. I agree that I shall return all information to which I have had access or which is in my possession 1) upon demand by an authorized individual; and/or 2) upon the conclusion of my duties, association, or support to DHS; and/or 3) upon the determination that my official duties do not require further access to such information.

6. I hereby agree that I will not alter or remove markings, which indicate a category of information or require specific handling instructions, from any material I may come in contact with, in the case of SSI or SBU, unless such alteration or removal is consistent with the requirements set forth in the laws, regulations, or directives applicable to the specific category of information or, in the case of PCII, unless such alteration or removal is authorized by the PCII Program Manager or the PCII Program Manager's designee. I agree that if I use information from a sensitive document or other medium, I will carry forward any markings or other required restrictions to derivative products, and will protect them in the same manner as the original.

7. I hereby agree that I shall promptly report to the appropriate official, in accordance with the guidance issued for the applicable category of information, any loss, theft, misuse, misplacement, unauthorized disclosure, or other security violation, I have knowledge of and whether or not I am personally involved. I also understand that my anonymity will be kept to the extent possible when reporting security violations.

8. If I violate the terms and conditions of this Agreement, such violation may result in the cancellation of my conditional access to the information covered by this Agreement. This may serve as a basis for denying me conditional access to other types of information, to include classified national security information.

9. (a) With respect to SSI and SBU, I hereby assign to the United States Government all royalties, remunerations, and emoluments that have resulted, will result, or may result from any disclosure, publication, or revelation of the information not consistent with the terms of this Agreement.

(b) With respect to PCII I hereby assign to the entity owning the PCII and the United States Government, all royalties, remunerations, and emoluments that have resulted, will result, or may result from any disclosure, publication, or revelation of PCII not consistent with the terms of this Agreement.

10. This Agreement is made and intended for the benefit of the United States Government and may be enforced by the United States Government or the Authorized Entity. By granting me conditional access to information in this context, the United States Government and, with respect to PCII, the Authorized Entity, may seek any remedy available to it to enforce this Agreement including, but not limited to, application for a court order prohibiting disclosure of information in breach of this Agreement. I understand that if I violate the terms and conditions of this Agreement, I could be subjected to administrative, disciplinary, civil, or criminal action, as appropriate, under the laws, regulations, or directives applicable to the category of information involved and neither the United States Government nor the Authorized Entity have waived any statutory or common law evidentiary privileges or protections that they may assert in any administrative or court proceeding to protect any sensitive information to which I have been given conditional access under the terms of this Agreement.

11. Unless and until I am released in writing by an authorized representative of the Department of Homeland Security (if permissible for the particular category of information), I understand that all conditions and obligations imposed upon me by this Agreement apply during the time that I am granted conditional access, and at all times thereafter.

12. Each provision of this Agreement is severable. If a court should find any provision of this Agreement to be unenforceable, all other provisions shall remain in full force and effect.

13. My execution of this Agreement shall not nullify or affect in any manner any other secrecy or non-disclosure Agreement which I have executed or may execute with the United States Government or any of its departments or agencies.

14. These restrictions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by Executive Order No. 12958, as amended; Section 7211 of Title 5, United States Code (governing disclosures to Congress); Section 1034 of Title 10, United States Code, as amended by the Military Whistleblower Protection Act (governing disclosure to Congress by members of the military); Section 2302(b)(8) of Title 5, United States Code, as amended by the Whistleblower Protection Act (governing disclosures of illegality, waste, fraud, abuse or public health or safety threats); the Intelligence Identities Protection Act of 1982 (50 USC 421 et seq.) (governing disclosures that could expose confidential Government agents); and the statutes which protect against disclosure that may compromise the national security, including Sections 641, 793, 794, 798, and 952 of Title 18, United States Code, and Section 4(b) of the Subversive Activities Act of 1950 (50 USC 783(b)). The definitions, requirements, obligations, rights, sanctions, and liabilities created by said Executive Order and listed statutes are incorporated into this agreement and are controlling.

15. Signing this Agreement does not bar disclosures to Congress or to an authorized official of an executive agency or the Department of Justice that are essential to reporting a substantial violation of law.

16. I represent and warrant that I have the authority to enter into this Agreement.

17. I have read this Agreement carefully and my questions, if any, have been answered. I acknowledge that the briefing officer has made available to me any laws, regulations, or directives referenced in this document so that I may read them at this time, if I so choose.

DEPARTMENT OF HOMELAND SECURITY  
**NON-DISCLOSURE AGREEMENT**  
 Acknowledgement

Typed/Printed Name:	Government/Department/Agency/Business Address	Telephone Number:

I make this Agreement in good faith, without mental reservation or purpose of evasion.

Signature:

**WITNESS:**

Typed/Printed Name:	Government/Department/Agency/Business Address	Telephone Number:

Signature:

This form is not subject to the requirements of P.L. 104-13, "Paperwork Reduction Act of 1995" 44 USC, Chapter 35.

U.S. DEPARTMENT OF HOMELAND SECURITY  
 FEDERAL EMERGENCY MANAGEMENT AGENCY  
**PERSONAL IDENTIFICATION VERIFICATION (PIV) CREDENTIAL**

Location:  FEMA Headquarters  Other \_\_\_\_\_  Federal Employee  Contractor  Other \_\_\_\_\_

**PART I - TO BE COMPLETED BY APPLICANT** (*Privacy Act signature required on reverse*)

NAME (Last, First, Middle)		PLACE OF BIRTH (City, State, Country)	DATE OF BIRTH (mm/dd/yy)
SOCIAL SECURITY NUMBER	APPLICANT'S SIGNATURE		DATE

**PART II - TO BE COMPLETED BY PIV SPONSOR (HR OR COTR) FOR APPLICANT**

FEMA OFFICE SYMBOL	BUILDING	ROOM NO.	OFFICE PHONE NO.	POSITION
Badge Type Requested: <input type="checkbox"/> NEW <input type="checkbox"/> TEMP. ( <i>Exp. date</i> ) _____ REPLACEMENT ( <i>check one</i> ) <input type="checkbox"/> Damaged <input type="checkbox"/> Lost <input type="checkbox"/> Expired				
EMPLOYEE STATUS: ( <i>For Federal Employees, SF 52 must be attached</i> )				
<input type="checkbox"/> PERMANENT EMPLOYEE	<input type="checkbox"/> CORE (Term expiration date _____)	<input type="checkbox"/> DAE		
<input type="checkbox"/> CONTRACTOR	<input type="checkbox"/> AFFILIATE ( <i>Government or Nongovernmental</i> )	<input type="checkbox"/> DTE		
<input type="checkbox"/> NDMS	Agency/Entity Name: _____	<input type="checkbox"/> TDW ( <i>Temporary Disaster Worker</i> )		
IF CONTRACTOR: Company Name: _____ Contract No.: _____ Contract Exp. Date: _____			COMMENTS:	

Access Needed:  FEMA HQ  MWEOC (*Entry Only*)  NPSC \_\_\_\_\_  REGION # \_\_\_\_\_  DISASTER# \_\_\_\_\_

NAME & TITLE OF PIV SPONSOR ( <i>HR or COTR</i> ) ( <i>Print</i> )	SIGNATURE	ORGANIZATION	TELEPHONE NO.
--	-----------	--------------	---------------

**I-9 VERIFICATION - TO BE COMPLETED BY PIV SPONSOR OR REGISTRAR**

U.S. Citizen: <input type="checkbox"/> Yes <input type="checkbox"/> No	I-9 Verification Type: _____	Attach copy of source document(s) or information from source document(s)
I-9 AUTHENTICITY VERIFICATION ( <i>Print Name &amp; Title</i> )	SIGNATURE	ORGANIZATION TELEPHONE NO.

**PART III - AUTHORIZATION, TO BE COMPLETED BY PIV REGISTRAR (PERSONNEL SECURITY)**

**BACKGROUND CHECK/SECURITY CLEARANCE (APPROVALS COMPLETED, FINAL APPROVAL FOR ISSUANCE OF PIV AUTHORIZED)**

INTERIM		PIV COMPLETED	
<input type="checkbox"/> SF 85P/86 SUBMITTED	DATE _____	<input type="checkbox"/> PUBLIC TRUST (SF85P)	DATE _____ <input type="checkbox"/> SECRET DATE _____
<input type="checkbox"/> NCIC FOR ACCESS	DATE _____	<input type="checkbox"/> TOP SECRET	DATE _____
<input type="checkbox"/> FBI FP CHECK	DATE _____	<input type="checkbox"/> OTHER ( <i>specify</i> ) _____	DATE _____
APPLICANT MEETS PIV 1: <input type="checkbox"/> YES <input type="checkbox"/> NO	IF NO, SPECIFY: _____	APPLICANT APPEARED IN PERSON WITH 2 FORMS OF ID ( <i>Must have 1 photo ID</i> )	PHOTO ID TYPE: _____
PIV REGISTRAR ( <i>Print Name &amp; Title</i> )	SIGNATURE	ORGANIZATION	TELEPHONE NO.

**PART IV - TO BE COMPLETED BY PIV ISSUER (PHYSICAL SECURITY)**

1. Confirmed validity of PIV credential request received from registrar. 2. Approval notification is consistent with results of background investigation. 3. Photo from Registrar must match Applicant.  YES (1, 2, 3)

PROX NO./TYPE	EXPIRATION DATE	IDENTIFICATION VERIFICATION ( <i>Photo ID</i> ) <input type="checkbox"/> STATE <input type="checkbox"/> FEDERAL ID TYPE: _____
ISSUER NAME & ORGANIZATION		TELEPHONE NO.
ISSUER'S SIGNATURE		DATE CREATED

**PIV Credential holder (*Applicant*) signature acknowledges receipt and acceptance of related responsibility for credential**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

*PRIVACY ACT INFORMATION*

**For contractors and non government approved organizations:**

The Privacy Act, 5 U.S.C. 522a, requires that federal agencies inform individuals, at the time information is solicited from them, whether the disclosure is mandatory or voluntary, by what authority such information is solicited, and what uses will be made of the information. You are hereby advised that the authority for soliciting Social Security Numbers (SSN's) is Executive Order 9397. In addition, the authority to collect each individual's "personally identifying information" is authorized under Executive Order 10450, section 2 and 3, Executive Order 12958, and Executive Order 12968, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended (42 U.S.C. § 5149(b) and the Privacy Act system of records, the Personnel Security System. The social security numbers and all "personally identifying information" will be used to identify individuals as required for the purpose of hiring and employment, including background checks. Such "personally identifying" information is required before each individual can be hired and granted access to agency-controlled facilities, computers, databases, and other agency systems. Although disclosure of social security numbers is not mandatory, failure to do so may impede the processing of each individual's application for employment. In addition, failure to provide complete "personally identifying" information may impede the processing of each individual's application for employment.

I have read and acknowledge the above Privacy Act statement and approve that my information be used to conduct a National Crime Information Center check prior to my access to FEMA facilities. I also agree to provide my fingerprints for the FBI Criminal History check and receive a favorable adjudication of the fingerprint results for continued access to FEMA facilities.

---

Signature

---

Date

**For FEMA and Other government agency employees:**

The Privacy Act, 5 U.S.C. 522a, requires that federal agencies inform individuals, at the time information is solicited from them, whether the disclosure is mandatory or voluntary, by what authority such information is solicited, and what uses will be made of the information. You are hereby advised that the authority for soliciting Social Security Numbers (SSN's) is Executive Order 9397. In addition, the authority to collect each individual's "personally identifying information" is authorized under Executive Order 10450, section 2 and 3, Executive Order 12958, and Executive Order 12968, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended (42 U.S.C. § 5149(b)). The social security numbers and all "personally identifying information" will be used to identify individuals as required for the purpose of hiring and employment, including background checks. Such "personally identifying" information is required before each individual can be hired and granted access to agency-controlled facilities, computers, databases, and other agency systems. Although disclosure of social security numbers is not mandatory, failure to do so may impede the processing of each individual's application for employment. In addition, failure to provide complete "personally identifying" information may impede the processing of each individual's application for employment.

I have read and acknowledge the above Privacy Act statement and approve that my information be used to conduct a National Crime Information Center check prior to my access to FEMA facilities. I also agree to provide my fingerprints for the FBI Criminal History check and receive a favorable adjudication of the fingerprint results for continued access to FEMA facilities. Should I already be employed, an unfavorable adjudication may result in my immediate release and termination from FEMA employment with no further appeal.

---

Signature

---

Date

September 29, 2008



**APPENDIX C**

**MAT  
Confidentiality Agreement**

September 29, 2008

## Mitigation Assessment Team Confidentiality Agreement

Subcontractors and all members of the Mitigation Assessment Team, herein called the MAT, agree not to divulge to third parties, or permit access to, information of any nature pertaining to the project or to this Agreement. Specifically, subcontractors and all other members of the MAT agree to maintain information developed during MAT field deployment and report preparation process in the strictest confidence. Disclosure of information may only occur when authorized in writing by the Federal Emergency Management Agency, herein called the FEMA, or FEMA's Technical Support Contractor, herein called the TS Contractor. The disclosure of information includes written and verbal released of data collected, conclusions, recommendations or any work product related to the MAT's activities. This confidentiality agreement specifically includes presentation and interviews.

Subcontractors may not assign this Agreement or the process thereto, nor employ lower-tier subcontractors without the express written permission of the TS Contractor.

Subcontractors agree to abide by all applicable provisions of the Prime Contract between the TS Contractor and Owner. The TS Contractor shall make copies of such Prime Contract available upon request.

Subcontractor shall be responsible for all damage to life and property due to its activities in connection with the services required under this Agreement and shall indemnify, defend and hold harmless the TS Contractor and Owner and their officers, employees and agents against any claims or legal liability arising out of Subcontractor's wrongful act or negligent performance of its services under this Agreement. Subcontractor shall maintain Workman's Compensation. Employer's Liability, general Liability insurance and will submit to the TS Contractor insurance certificates indicating coverage in amounts and with carriers satisfactory to the TS Contractor.

Subcontractors shall advise the TS Contractor of the name of its manager responsible for supervision of the services covered under this Agreement. Subcontractors warrant that they have no conflict of interest and will acquire none.

SUBCONTRACTORS:

All OTHER MAT MEMBERS

\_\_\_\_\_  
Firm Name

\_\_\_\_\_  
Signed Date

\_\_\_\_\_  
Authorized Signature Date

\_\_\_\_\_  
Type/Print Name

\_\_\_\_\_  
Type/Print Name and Title

\_\_\_\_\_  
Contact Phone/Emergency Point of Contact

\_\_\_\_\_  
Phone Number/Emergency Point of Contact

September 29, 2008

## **APPENDIX D**

### **Checklist for Preliminary Field Assessment Team (PFAT)**

September 29, 2008

## I. INTRODUCTION

- Community: \_\_\_\_\_
- County: \_\_\_\_\_ State: \_\_\_\_\_
- Date of visit: \_\_\_\_\_ Time: \_\_\_\_\_
- Name of PFA team member(s): \_\_\_\_\_
- Organization(s)/Affiliation(s): \_\_\_\_\_

## II. DISASTER/DAMAGE INFORMATION

- Type of event:
  - Riverine Flood
  - Tsunami
  - Fire
  - Ice Jam
  - Erosion
  - Alluvial Fan Flood
  - Hurricane
  - Tornado
  - Dam break
  - Northeaster
  - Earthquake
  - Subsidence
  - Landslide
  - Other \_\_\_\_\_
- Damage to:
  - Primarily residential buildings
  - Single-family
  - Multi-unit
  - Primarily non-residential buildings
  - Commercial
  - Industrial
  - Critical facilities
  - Farm
  - Institutional
  - Other

- Distribution of damaged buildings within affected area:

- Widespread
- Isolated
- Concentrated in specific areas (describe):

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- Damage caused by (Rank if appropriate):

- Flood inundation
- Seismic forces
- Wave impact
- Wind
- Stormwater
- Erosion/scour
- Deposition
- Debris impact
- Other \_\_\_\_\_

- Primary type(s) of construction affected:

- |  |  |
|--|--|
| <input type="checkbox"/> Engineered        | <input type="checkbox"/> Modular                           |
| <input type="checkbox"/> Non-Engineered    | <input type="checkbox"/> Combination wood<br>frame/masonry |
| <input type="checkbox"/> Wood Frame        | <input type="checkbox"/> Other:                            |
| <input type="checkbox"/> Manufactured home | _____  |
| <input type="checkbox"/> Masonry           |  |

- Primary foundation type(s) of affected buildings:

- Basement
- Crawlspace
- Slab-on-grade
- Piles/piers
- Shear wall

### **III. ANALYSIS/NEED FOR MAT**

- Analysis needed due to:
  - Design issues
  - Performance of materials
  - Construction methods
  - Code administration
  - Local regulations
  - Nonconforming use
  - Exceeded design
  - Other: \_\_\_\_\_
  
- Successful performance indicative of:

- Design
- Materials
- Construction methods
  - Code requirements
  - Local regulatory activities
  - Other: \_\_\_\_\_

**IV. DEPLOYMENT RECOMMENDATION**

- Will assessment of building failures and/or successes yield information that can be used to reduce future damages? \_\_\_ yes \_\_\_ no Why?

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- Is MAT deployment warranted? \_\_\_ yes \_\_\_ no Why?

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**V. ANTICIPATED MAT REQUIREMENTS**

- Where should MAT field inspections be concentrated and what issues should be analyzed at each site?

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- What types of expertise should MAT members possess?

Technical Skills

- Building construction
- Structural engineering
- Architecture
- Code development
- Construction inspection
- Geotechnical engineering
- Hazard mitigation
- Environmental Engineering
- Planning
- Other: \_\_\_\_\_

- Administrative/Support Skills

- Technical writing/editing
- Graphic Arts
- Word Processing
- Other: \_\_\_\_\_

- What special support services will the MAT require:

- Aerial photography/videography
- Rental vehicles (cars, vans, 4-wheel drive) Specify: \_\_\_\_\_
- Special security
- Airplane/helicopter
- Cameras (still, video)
- Boat

September 29, 2008



- Special clothing
  - Mobile phones
  - Other: \_\_\_\_\_
- What field hazards/inconveniences may affect MAT members conducting inspections:
  - Unsafe structures
  - Elevated water levels
  - Hazardous/toxic materials
  - Insects/snakes
  - Blocked/closed roads
  - Lack of hotel accommodations
  - Other: \_\_\_\_\_

**VI. LOCAL COORDINATION**

- List any technical needs identified by local official(s):

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- Describe involvement of, or coordination with, local official(s) during PFA:

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- List local official(s) who will potentially serve on MAT or act as primary point(s) of contact during MAT deployment:

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**FEMA OFFICE APPROVAL\***

The following FEMA representative has reviewed and approved this completed checklist:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

\*To be completed by the TL

September 29, 2008

# **APPENDIX E**

## **Sample MAT Data Collection Sheets**

September 29, 2008

Sample Flood Data Collection Sheet (page 1)

General Information

TEAM ID:

LOC ID:

Assessor(s):  Date/Time:   am  pm

Facility Name (if applicable):

Location #:  Street #:  Street name:   
Latitude:  City:  State:   
Longitude:  County:

Building Information (if applicable)

Historic

Estimated SF:  Age of structure:  (select one)  Estimated  Known  
# Stories/floors:  # Stories above grade:  # Stories below grade:

Primary Occupancy (select all that apply)

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Governmental (select one) <input type="radio"/> Federal <input type="radio"/> State <input type="radio"/> Local	<input type="checkbox"/> Residential (select one) <input type="radio"/> 1 & 2 family dwelling <input type="radio"/> Low-rise multi-family <input type="radio"/> Manufactured Home <input type="radio"/> Other (describe):	<input type="checkbox"/> Commercial/Industrial (select one) <input type="radio"/> Offices <input type="radio"/> Assembly <input type="radio"/> Educational <input type="radio"/> Worship <input type="radio"/> Other (describe):	<input type="checkbox"/> Critical/Essential Facility (select one) <input type="radio"/> Police <input type="radio"/> Hospital <input type="radio"/> Fire <input type="radio"/> Shelter <input type="radio"/> EOC <input type="radio"/> School <input type="radio"/> Other (describe):
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Occupants currently displaced?  Yes  No  N/A

Foundation Type and Materials (select all that apply)

<input type="checkbox"/> Open <input type="checkbox"/> Closed	<input type="checkbox"/> Slab (select one) <input type="radio"/> Monolithic <input type="radio"/> Stem Wall	
<input type="checkbox"/> Shallow Posts/Piers (select one) <input type="radio"/> Masonry (select one) <input type="radio"/> RM <input type="radio"/> URM <input type="radio"/> DS (dry stacked) <input type="radio"/> Concrete <input type="radio"/> Other (describe):	<input type="checkbox"/> Continuous Foundation Wall (select one) <input type="radio"/> Brick <input type="radio"/> RM <input type="radio"/> URM <input type="radio"/> Wood <input type="radio"/> Other (describe): Flood Vents (select one) <input type="radio"/> Yes <input type="radio"/> No	Break-away Walls (select one) <input type="radio"/> Yes <input type="radio"/> No

Superstructure (select all that apply)

Reinforced concrete frame  Wood framed walls  URM in-fill walls  
 Steel frame  Steel stud  RM in-fill walls  
 Braced steel frame  Other (describe):

Wall Surface (select all that apply)

Wood Siding  Cement-fiber  Stucco  Brick Veneer  Vinyl  EIFS  
 Other (describe):

Basement Category (select all that apply)

<input type="checkbox"/> Natural Ground Basement Comments:	<input type="checkbox"/> Engineered Natural Ground Basement <input type="radio"/> Gravity vents <input type="radio"/> Sump pump <input type="radio"/> Filter cloth	<input type="checkbox"/> Fill Protected Basement Type of fill:	<input type="checkbox"/> Engineered Filled Protected Basement <input type="radio"/> Gravity vents <input type="radio"/> Sump pump <input type="radio"/> Filter cloth Type of fill:
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**Sample Flood Data Collection Sheet (page 2)**

**Damage Information (if applicable)**

Observed Repairs  Yes  No  N/A

**Exterior Damage (select all that apply)**

<b>Walls</b>	<b>Windows</b>	<b>Doors</b>	<b>Trim</b>	<b>Foundation</b>
<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Structural	<input type="checkbox"/> Structural	<input type="checkbox"/> Structural	<input type="checkbox"/> Structural	<input type="checkbox"/> Structural

**Interior Damage (select all that apply)**

<b>Walls</b>	<b>Windows</b>	<b>Doors</b>	<b>Trim</b>	<b>Kitchen Cabinets</b>	<b>Ceiling</b>
<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace

<b>Finish Flooring</b>	<b>Subflooring</b>
<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> Cosmetic	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Replace	<input type="checkbox"/> Replace

**Building Systems and Equipment Damage (select all that apply)**

<b>Space Heating</b>	<b>Space Cooling</b>	<b>Ventilation</b>	<b>Water Heating</b>	<b>Lighting</b>	<b>Communications</b>	<b>Electric Distribution</b>
<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable	<input type="checkbox"/> Repairable
<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace	<input type="checkbox"/> Replace

**Mold Present**

<b>Walls</b>	<b>Floor</b>	<b>Ceiling</b>	<b>Doors</b>	<b>Cabinets</b>
<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None
<input type="checkbox"/> <10%	<input type="checkbox"/> <10%	<input type="checkbox"/> <10%	<input type="checkbox"/> <10%	<input type="checkbox"/> <10%
<input type="checkbox"/> 11-25%	<input type="checkbox"/> 11-25%	<input type="checkbox"/> 11-25%	<input type="checkbox"/> 11-25%	<input type="checkbox"/> 11-25%
<input type="checkbox"/> >26%	<input type="checkbox"/> >26%	<input type="checkbox"/> >26%	<input type="checkbox"/> >26%	<input type="checkbox"/> >26%

**Possible Contamination Present**

<input type="checkbox"/> Walls
<input type="checkbox"/> Floor
<input type="checkbox"/> Foundation
<input type="checkbox"/> Grounds
<input type="checkbox"/> Other (describe):

**Types of Damage (select all that apply)**

<input type="checkbox"/> Collapse	<input type="checkbox"/> Displaced off foundation	<input type="checkbox"/> Partial structural collapse	<input type="checkbox"/> Attached equip/HVAC
<input type="checkbox"/> Structural	<input type="checkbox"/> Damaged doors	<input type="checkbox"/> Displaced utilities	<input type="checkbox"/> Roof covering
<input type="checkbox"/> Broken windows	<input type="checkbox"/> Scoured foundation	<input type="checkbox"/> Wall covering	
<input type="checkbox"/> Other (describe):			

**Flood Induced Damage (select one)**

<input type="checkbox"/> None
<input type="checkbox"/> Minimal 0-9%
<input type="checkbox"/> Moderate 10-29%
<input type="checkbox"/> Severe 30-49%
<input type="checkbox"/> Substantial 50+%

**Flood Depth (Above top of lowest floor)**

(select one)

<input type="checkbox"/> <2'
<input type="checkbox"/> 2' - 4'
<input type="checkbox"/> >4'

**Flood Depth (Above adjacent grade)**

(select one)

<input type="checkbox"/> <2'
<input type="checkbox"/> 2' - 4'
<input type="checkbox"/> >4'

Photographs (first and last photograph file names for this location):

General Description of overall area:

General description of damage at site (to structure, foundation, envelope, contents, accessories, etc.):

**Sample Hurricane Data Collection Sheet (page 1)**

**General Information**

**TEAM ID:**  **LOC ID:**

Assessor(s):  Date (am/pm):   am  pm

Facility Name (if appl.):

Location #:  Street #:  Street Name:

City:  State:  Zip:

Lat:  Long:  County:

**Building Information (if applicable)**

**Dimensions** Width:  Length:  Footprint:  sf

# Stories/floors:  Roof shape:  Total sf:

# Stories above grade:  # Stories below grade:

Age of struc:   Estimated  Known (select one)  Historic

**Wind Exposure** (select one)  B  C

**Tree Cover** (select one)  Light  Mod  Heavy  None

**Primary Occupancy (select all that apply)**

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Governmental (select one) Fed <input type="radio"/> State <input type="radio"/> Local <input type="radio"/>	<input type="checkbox"/> Residential (select one) 1 & 2 family dwelling <input type="radio"/> Low-rise multi-family <input type="radio"/> Manufactured home <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>	<input type="checkbox"/> Commercial/Industrial (select one) Offices <input type="radio"/> Assembly <input type="radio"/> Educational <input type="radio"/> Worship <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>	<input type="checkbox"/> Critical/Essential Facility (select one) Police <input type="radio"/> Fire <input type="radio"/> Hospital <input type="radio"/> Shelter <input type="radio"/> EOC <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>
--------------------------------------	--	--	--	---

**Foundation type and materials (select all that apply)**

Open  Closed  Slab (select one) Monolithic  Stem Wall

<input type="checkbox"/> Deep Piles (select one) Wood <input type="radio"/> Concrete <input type="radio"/> Steel <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>	<input type="checkbox"/> Shallow posts/piers (select one) Masonry <input type="radio"/> (select one) RM <input type="radio"/> URM <input type="radio"/> DS (dry stacked) <input type="radio"/> Concrete <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>	<input type="checkbox"/> Continuous Foundation Wall (select one) Brick <input type="radio"/> RM <input type="radio"/> URM <input type="radio"/> Wood <input type="radio"/> Other <input type="radio"/> Desc: <input type="text"/>	<b>Flood Vents</b> (select one) Yes <input type="radio"/> No <input type="radio"/>  <b>Windborne debris sources</b> (select one) Yes <input type="radio"/> No <input type="radio"/>
---	---	--	---

**Sample Hurricane Data Collection Sheet (page 2)**

**Building Information (continued)**

**Superstructure (select all that apply)**

- |  |  |                                     |
|--|--|-------------------------------------|
| <input type="checkbox"/> Reinforced concrete frame | <input type="checkbox"/> Wood framed walls | <input type="checkbox"/> Steel stud |
| <input type="checkbox"/> Steel frame               | <input type="checkbox"/> URM in-fill walls | <input type="checkbox"/> Other      |
| <input type="checkbox"/> Braced steel frame        | <input type="checkbox"/> RM in-fill walls  |                                     |

Desc:

**Wall surface (select all that apply)**

- |                                       |                                       |                                 |                                |
|---------------------------------------|---------------------------------------|---------------------------------|--------------------------------|
| <input type="checkbox"/> Wood Siding  | <input type="checkbox"/> Cement-fiber | <input type="checkbox"/> Stucco | <input type="checkbox"/> Other |
| <input type="checkbox"/> Brick Veneer | <input type="checkbox"/> Vinyl        | <input type="checkbox"/> EIFS   |                                |

Desc:

**Roof framing (select all that apply)**

- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> Wood framed  | <input type="checkbox"/> Poured concrete   |
| <input type="checkbox"/> Steel joists | <input type="checkbox"/> Pre-cast concrete |

**Roof covering (select all that apply)**

- |  |   |   |                                |                                      |  |
|--|---|---|--------------------------------|--------------------------------------|--|
| <input type="checkbox"/> Asphalt shingle | <input type="checkbox"/> BUR - w/ aggregate | <input type="checkbox"/> Modified bitumen |                                |                                      |  |
| <input type="checkbox"/> Tile            | <input type="checkbox"/> BUR -w/o aggregate | <input type="checkbox"/> SPM              | <input type="checkbox"/> Metal | <input type="checkbox"/> Other metal |  |

- |   |  |
|---|--|
| (select one)                            | (select one)                           |
| Mech fastened <input type="radio"/>     | Standing seam <input type="radio"/>    |
| Adhered <input type="radio"/>           | Exposed fastener <input type="radio"/> |
| Aggregate ballast <input type="radio"/> |  |
| Paver ballast <input type="radio"/>     |  |

Desc:

**Roof decking (select all that apply)**

- |                                   |  |  |
|-----------------------------------|--|--|
| <input type="checkbox"/> Wood     | <input type="checkbox"/> Steel               | <input type="checkbox"/> Cementitious Wood Fiber         |
| <input type="checkbox"/> Concrete | <input type="checkbox"/> Concrete over steel | <input type="checkbox"/> Light weight insulated concrete |

**Shape (select one)**

- Gable
- Hip
- Flat
- Complex
- Shed
- Other

**Roof Slope (select one)**

- 0 - 1:12
- 1:12 - 3:12
- 3:12 - 5:12
- >5:12

**Roof Equipment(select one)**

- Effectively anchored
- Un-anchored

Desc:

**Shutters/Protection (select all that apply)**

- |  |                      |
|--|----------------------|
| <input type="checkbox"/> Percent of windows/openings on bldg             | <input type="text"/> |
| <input type="checkbox"/> Percent of protected windows/openings on bldg   | <input type="text"/> |
| <input type="checkbox"/> Percent of damaged windows/openings on bldg     | <input type="text"/> |
| <input type="checkbox"/> Percent of damaged large/overhead doors on bldg | <input type="text"/> |

% of Exterior Wall Area

Comment

<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

## Sample Hurricane Data Collection Sheet (page 3)

### Damage Information

Cause of Damage (select all that apply)

- Wind       Flood (non-surge)       Storm surge       Other, describe:   
 Tree Fall       Floodborne debris       Windborne debris

Severity of damage (select all that apply)

- Catastrophic       Severe       Moderate       Other, describe:

Types of damage (select all that apply)

- Collapse       Displ off foundation       Partial struct collapse       Other, describe:   
 Structural       Damaged doors       Attached equip/HVAC  
 Broken windows       Scoured fdn       Flood or surge in str  
 Failed shutters       Roof covering       Str removed by surge  
 Displaced utilities       Wall covering

#### Roof Covering Damage

(select one)

- None   
 <10%   
 10% to 25%   
 25% to 50%   
 >50%

#### Roof Sheathing Damage

(select one)

- None   
 <10%   
 10% to 25%   
 25% to 50%   
 >50%

#### Structure Damage

(select one)

- None   
 <10%   
 10% to 25%   
 25% to 50%   
 >50%

#### Flood induced damage

(select one)

- None   
 Minimal 0 - 10%   
 Moderate 10 - 30%   
 Severe 30 - 50%   
 Substantial 50+%

Flood Depth (Above top of lowest floor)

(select one)

- <2'   
 2' to 4'   
 >4'

General description of wind/flood damage (to struct, fdn, envelope, roof top equipment, contents, accessories, etc.)



## Sample Hurricane Data Collection Sheet (page 4)

### Damage Information (continued)

**Evaluation** Investigate the building for the conditions below and check the appropriate column. There is room on the second page for a sketch.

Overall hazards:	Minor/None	Moderate	Severe	Comments
Collapse or partial collapse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building or story lean or drift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fractured or displaced foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Structural hazards:</b>				
Failure of significant element/connection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Column, pier, or bearing wall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Roof/floor framing or connection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Superstructure/foundation connection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Moment frame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Diaphragm/horizontal bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vertical bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Shear wall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Nonstructural hazards:</b>				
Parapets, ornamentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Canopy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cladding, glazing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceilings, light fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stairs, exits, access walkways, gratings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Interior walls, partitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mechanical & electrical equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Elevators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building contents, other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Geotechnical hazards:</b>				
Slope failure, debris impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, erosion, sedimentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Differential settlement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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## **APPENDIX F**

### **Sample MAT Photo Log**

September 29, 2008

HURRICANE CHARLEY MAT (TARC Task Order 073)

NAME: John Squerciati

SUB-TEAM: N/A

PHOTO LOG

Photo File Name* (.jpg)	Date	Structure Name & Address	City/Community	County	Description	MAT Figure No.
A01-816-sfr-DeepCreek-JJS	8/16/04	264 Goya Ct.	Deep Creek	Charlotte	Front view: roof shingle damage	
A15-816-mah-PortCharlotteVil-JJS	8/16/04	Fort Charlotte Village Trailer Park	Near Deep Creek	Charlotte	Overview: damaged manufactured homes in trailer park near Deep Creek	
B06-818-mod-PuntaGorda-JJS	8/18/04	189 Dolphin Circle	Punta Gorda	Charlotte	Front view: modular home, overhang loss, associated roof damage	
D04-821-mfr-HarborVillage-JJS	8/21/04	Harbor Village, intersection of Shoenfeld & Warren	El Jobean	Charlotte	Side view: damage to vinyl siding at gable end	
B01-817-CharlotteCountyEOC-JJS	8/17/04	County EOC, 7474 Utilities Rd.	East of Punta Gorda	Charlotte	Rear view: west end roof failure	
I15-824-AutoZone-PortCharlotte-JJS	8/24/04	Auto Zone, 3457 N. Tamiami Dr.	Port Charlotte	Charlotte	Details: bar joists collapsed, front CMU block wall leaning out of plumb	
C08-820-ShoppingCenter-Wauchula-JJS	8/20/04	Hwy. 17 South	Wauchula	Hardee	Front view: damaged EIFS storefronts and roofs	
F26-823-CharlotteCountyFireEMSSStation7-JJS	8/23/04	Charlotte County Fire & EMS Station 7, 3624 Ash St.	Punta Gorda	Charlotte	Detail: windborne tree limb penetrated through rear CMU block wall section	
F21-823-PuntaGordaCityFireStation3-JJS	8/23/04	Punta Gorda City Fire Station 3, 1623 Aquí Esta	Punta Gorda Isles	Charlotte	Detail: loss of rollers on damaged garage bay door	
B22-820-lmfc-Wauchula-JJS	8/20/04	Hwy. 17 (across from temp. police station)	Wauchula	Hardee	Side view: partially collapsed light metal frame building and carport	
B26-820-cmfc-Wauchula-JJS	8/20/04	5th St. & Main St.	Wauchula	Hardee	Rear view: loss of roof, garage door and windows on metal frame building	
C01-820-urmc-Wauchula-JJS	8/20/04	5th St. & Main St.	Wauchula	Hardee	Rear view: loss of roof which led to front CMU wall and awning collapse	
B27-820-cmfc-Wauchula-JJS	8/20/04	5th St. & Main St.	Wauchula	Hardee	Rear view: metal roof damage on metal frame building with CMU infill walls	
I12-824-MedicalBuilding-PortCharlotte-JJS	8/24/04	Medical office building, 4130 N. Tamiami Dr.	Port Charlotte	Charlotte	Detail: damage to architectural roof at corner, causing roof damage	
H01-824-IslesHardware-PuntaGorda-JJS	8/24/04	Isles Hardware, 3205 Tamiami Dr.	Punta Gorda	Charlotte	Front view: light metal commercial building with partial roof collapse	Figure 3-22
G26-824-CharlotteCountyJusticeCenter-JJS	8/24/04	Charlotte County Justice Center, W. Marion Ave.	Punta Gorda	Charlotte	Detail: separation/cracking between column and infill wall at stairway to roof	
H24-824-MatachaPineIslandFireDept-JJS	8/24/04	Matacha/Pine Island Fire Dept. Station, 5700 Pine Island Rd.	Pine Island	Lee	Top view: fallen antenna nearly damaged generator at rear of building	
I01-824-CapeCoralFireDeptStation5-JJS	8/24/04	Cape Coral Fire Dept. Station No. 5, 1029 Diplomat Blvd.	Cape Coral	Lee	Front view: damage to asphalt roof shingles, garage bay door failed	
C39-820-DeSotoMemorialHospital-JJS	8/20/04	Desoto Memorial Hospital (near Middle School)	Arcadia	DeSoto	Rear view: partial collapse of adjacent light metal frame storage building	Figure 3-28
E19-822-CharlotteCountyHighSchool-oldgym-JJS	8/22/04	Charlotte County High School, old gym building next to building F	Punta Gorda	Charlotte	Front/side view: damage to OSB dome roof sheathing and metal awning	
C31-820-DeSotoCountyHighSchool-JJS	8/20/04	DeSoto County High School (across from Turner Center)	Arcadia	DeSoto	Detail: hallway ceiling tile damage caused by roof truss uplift	
C22-820-TurnerCenter-JJS	8/20/04	Turner Civic Center (address not indicated)	Arcadia	DeSoto	Detail: east wall failure at base due to insufficient bar overlap, slab anchorage	
E13-822-CharlotteCountySouthAnnex-JJS	8/22/04	Charlotte County South Annex, 410 Taylor St.	Punta Gorda	Charlotte	Detail: broken glass windows behind shutter - annealed glass with window film	
H16-824-USPostOffice-Bokeelia-JJS	8/24/04	U.S. Post Office, Barrancos & Stringfellow Rd.	Bokeelia	Lee	Front view: masonry wall structure with asphalt shingle hip roof	

NOTE: Photo File Name convention is as follows:

1. For Residential Buildings

[Camera and Photo Number]-[Date (month and day, 2004)]-[Building Type]-[Location or Subdivision]-[Photographer Initials]

Where Building Type: sfr = single-family residential  
mfr = multi-family residential  
mah = manufactured home  
mod = modular home

2. For Public Buildings

[Camera and Photo Number]-[Date (month and day, 2004)]-[Building Name]-[Location (if needed)]-[Photographer Initials]

3. For General Commercial/Industrial Buildings

[Camera and Photo Number]-[Date (month and day, 2004)]-[Building Type]-[Location or Subdivision]-[Photographer Initials]

Where Building Type: lmfc = light metal frame commercial  
urmc = unreinforced masonry commercial  
cmfc = light metal frame with corrugated metal sheathing  
cmfcmuc = light metal frame with corrugated metal sheathing and CMU infill walls

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## **APPENDIX G**

### **Sample MAT Daily Log Entry**

September 29, 2008

**MAT Daily Report**  
**October 8, 2006**

Over the fifth day, the MAT visited Orleans Parish. The team observed the following occurrences throughout the region:

- Flooding caused severe damage to pre-FIRM and post-FIRM buildings.
- Flood depths in various neighborhoods varied from 0 feet to more than 8 feet above the lowest floor.
- Structures that were opened to the air and allowed to dry more quickly experienced less structural damage and mold growth.

Samples of flooded building materials and sediments inside buildings were taken for environmental testing to measure residual contaminants and effects on restoration.

**DISCLAIMER**

Note these are preliminary observations and NOT for general distribution. The MAT team will continue to develop this report from the field and the data will be used appropriately to develop the overall Hurricane Katrina MAT Report.

Attachment A – Group 4 (New Orleans/Flood) October 8, 2005, Report

September 29, 2008


ATTACHMENT A  
Group 4 – New Orleans/Flood

October 8, 2005



**Team Members** – John Squerciati, Wally Wilson, Michael Pinto, Frank Headen, Larry Buss, and Jon Janowicz

**Sites Visited** – Critical and Residential Facilities in New Orleans (Orleans Parish)



LOCATION	SITE	LAT	LON	DESCRIPTION	COMMENTS/OBSERVATIONS
New Orleans, LA	Fire Station No. 00 	29.93495N	90.09483W	Fire station constructed approximately 70 years ago with wood-frame and masonry walls and a wood roof deck supported by timber trusses.	Structure experienced flood depths that were 3' above the first floor. Two of three garage bay doors and a few windows were damaged by flooding and/or looters. Several asphalt roof shingles were blown off by the wind.

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LOCATION	SITE	LAT	LON	DESCRIPTION	COMMENTS/OBSERVATIONS
New Orleans, LA	777 Octagon 	29.94866N	90.10879W	High-end residential building constructed approximately 50 years ago – Wood frame constructed on slab with shallow piers.	Structure experienced flood depths that were 5.5' above the first floor. Extensive heavy mold growth was visible inside throughout the first floor. Minor wind damage to roof-mounted equipment (TV antenna.)
New Orleans, LA	Fire Station No. 99 	30.02938N	90.07721W	Fire station constructed in 1954 – URM building with lightweight concrete insulated roof panels.	Structure experienced flood depths that were 2' to 3' above the first floor. Front columns were damaged by floodborne debris impact forces. Roof flashing damaged by high winds.

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## **APPENDIX H**

### **Glossary**

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**Building Performance Assessment Team (BPAT)** – The designation previously used for a Mitigation Assessment Team (MAT).

**Contracting Officer (CO)** – The Branch Chief of the Mitigation Branch of FEMA’s Office of Chief Procurement Officer. The CO is the only person authorized to incur expenses in the name of the U.S. Government and, as such, is the only person authorized to issue verbal authorization to the TS Contractor to incur expenses

**Contracting Specialist** -- Is an employee of the Mitigation Branch of FEMA’s Office of Chief Procurement Officer and acts as the Contracting Officer’s representative during contract and task order negotiations. This person is the primary point of contact within FEMA concerning contract issues.

**Deployment Phase** – Is the period where the MAT conducts field inspections of buildings, residential homes, critical facilities, and other requested infrastructure and coordinates their efforts with other agencies (Federal, State, local).

**Joint Field Office (JFO)** -- Temporary office established by FEMA at a disaster site to coordinate disaster response activities.

**Federal Emergency Management Agency (FEMA)** – The Federal agency that is responsible for the management of the MAT program.

**Memorandum of Understanding (MOU)** -- Agreement by which FEMA secures the services of other Federal agencies, state or local governments, and professional organizations.

**Mitigation Assessment Team (MAT)** -- A team of FEMA and State / local government representatives, technical specialists, and support personnel who, under the direction of FEMA's

September 29, 2008

Mitigation Division's Risk Reduction Branch, Building Science Section conduct field inspections and technical evaluations of the performance of buildings subjected to forces generated by disaster events (e.g., hurricanes, floods, tornadoes).

**Mitigation Assessment Team Report** -- Report prepared by FEMA's Mitigation Division Risk Reduction Branch, Building Science Section that documents the findings and conclusions of the MAT and presents recommendations for improvements to building design, construction methods, materials, and codes, and permitting activities.

**National Flood Insurance Program (NFIP)** – The program which makes Federally-backed flood insurance available in communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage.

**Post-Deployment Phase** -- Period during which FEMA's Mitigation Division Risk Reduction Branch, Building Science Section evaluates the effectiveness and efficiency of the MAT process.

**Post-Event Stage** -- Portion of the pre-deployment phase, after the occurrence of the disaster event, during which FEMA's Mitigation Division Risk Reduction Branch, Building Science Section, carries out the activities necessary to determine whether deployment of a MAT is warranted.

**Pre-Deployment Phase** -- Period during which FEMA's Mitigation Division Risk Reduction Branch, Building Science Section performs the pre- and post-event activities necessary to determine whether deployment of a MAT is necessary.

**Pre-Event Stage** -- Portion of the pre-deployment phase, prior to the occurrence of the disaster event, during which FEMA's Mitigation Division Risk Reduction Branch, Building Science Section, carries out the planning and coordination activities necessary to anticipate post-event needs.

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**Preliminary Field Assessment Team (PFAT)** -- Initial field inspection performed under the supervision of FEMA's Mitigation Division Risk Reduction Branch, Building Science Section as quickly as possible after a disaster has occurred to determine the scope and types of damage sustained by buildings in the disaster area and to determine whether a MAT should be deployed.

**TS Contractor Project Manager (TSPM)** -- Representative of the Technical Support Contractor who is responsible for all support services provided to the Mitigation Division by the contractor and its subcontractors.

**Project Officer (PO)** -- Representative of FEMA's Mitigation Division Risk Reduction Branch, Building Science Section who directs the activities of the Technical Support Contractor.

**Public Information Officer (PIO)** -- Member of FEMA Headquarters staff (and some regional office staffs) who is responsible for responding to media and public inquiries on behalf of the Agency.

**Regional Offices (ROs)** -- FEMA has ten regional offices. Each region serves several states, with their staff working directly with the states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur.

**Standard Operating Procedures (SOP)** -- Procedures established by the Mitigation Division that define the responsibilities and activities of the Division and its Technical Support Contractor for the pre-deployment, deployment, and post-deployment phases of the MAT process.

**Team Leader (TL)** -- Representative of FEMA's Mitigation Division Risk Reduction Branch, Building Science Section who participates in and is responsible for the activities of the MAT.

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**Team Manager (TM)** – Employee of the TS Contractor who is responsible for managing the day-to-day operations of the MAT, including logistical issues.

**Technical Support (TS) Contractor** -- Engineering firm contractually bound to FEMA to provide technical and administrative support for the MAT process.

**Transitional Recovery Office (TRO)** – An office established by FEMA at a disaster site to coordinate long-term disaster recovery and hazard mitigation activities.

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